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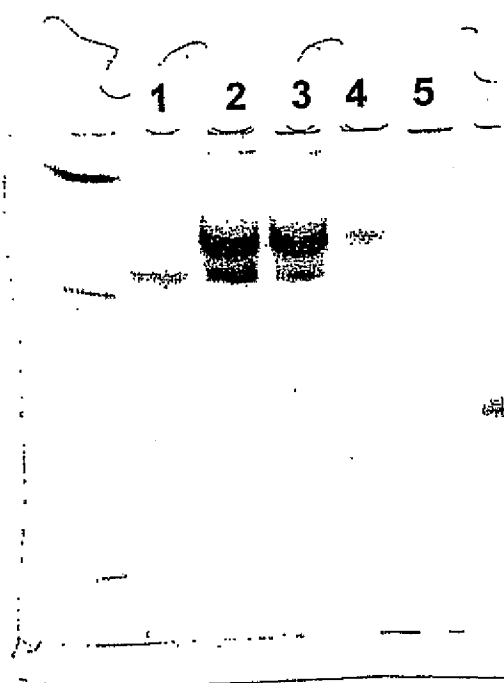


FIG. 157

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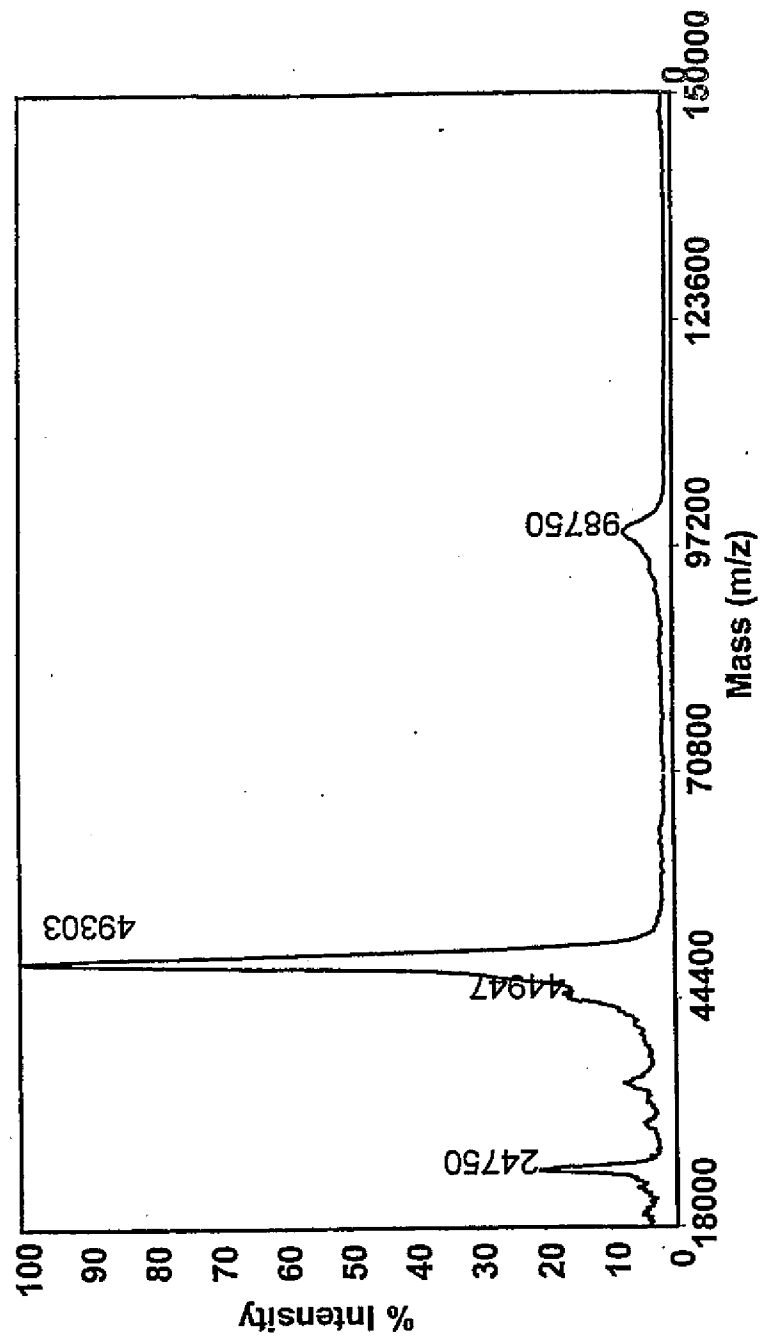


FIG. 158

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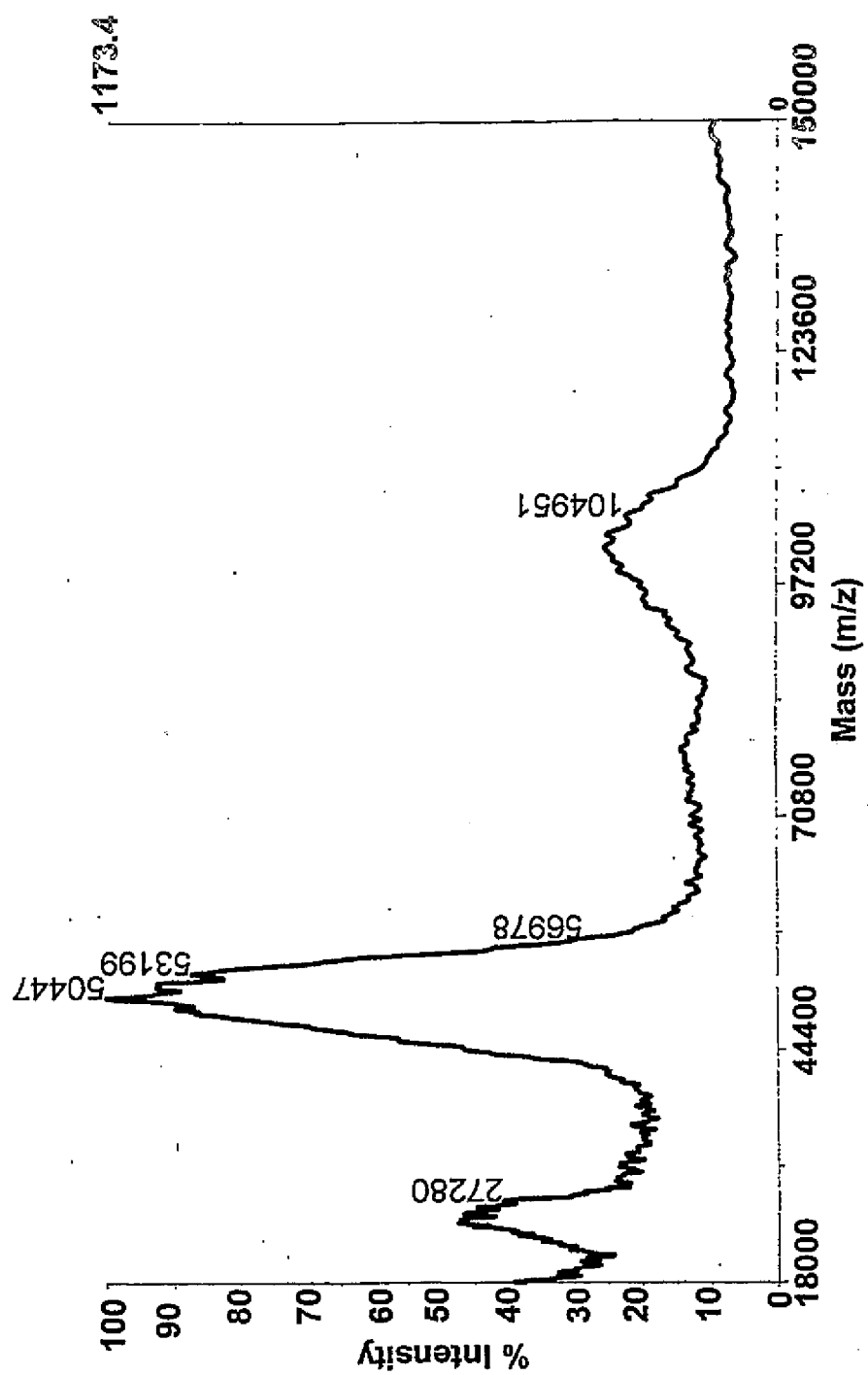


FIG. 159

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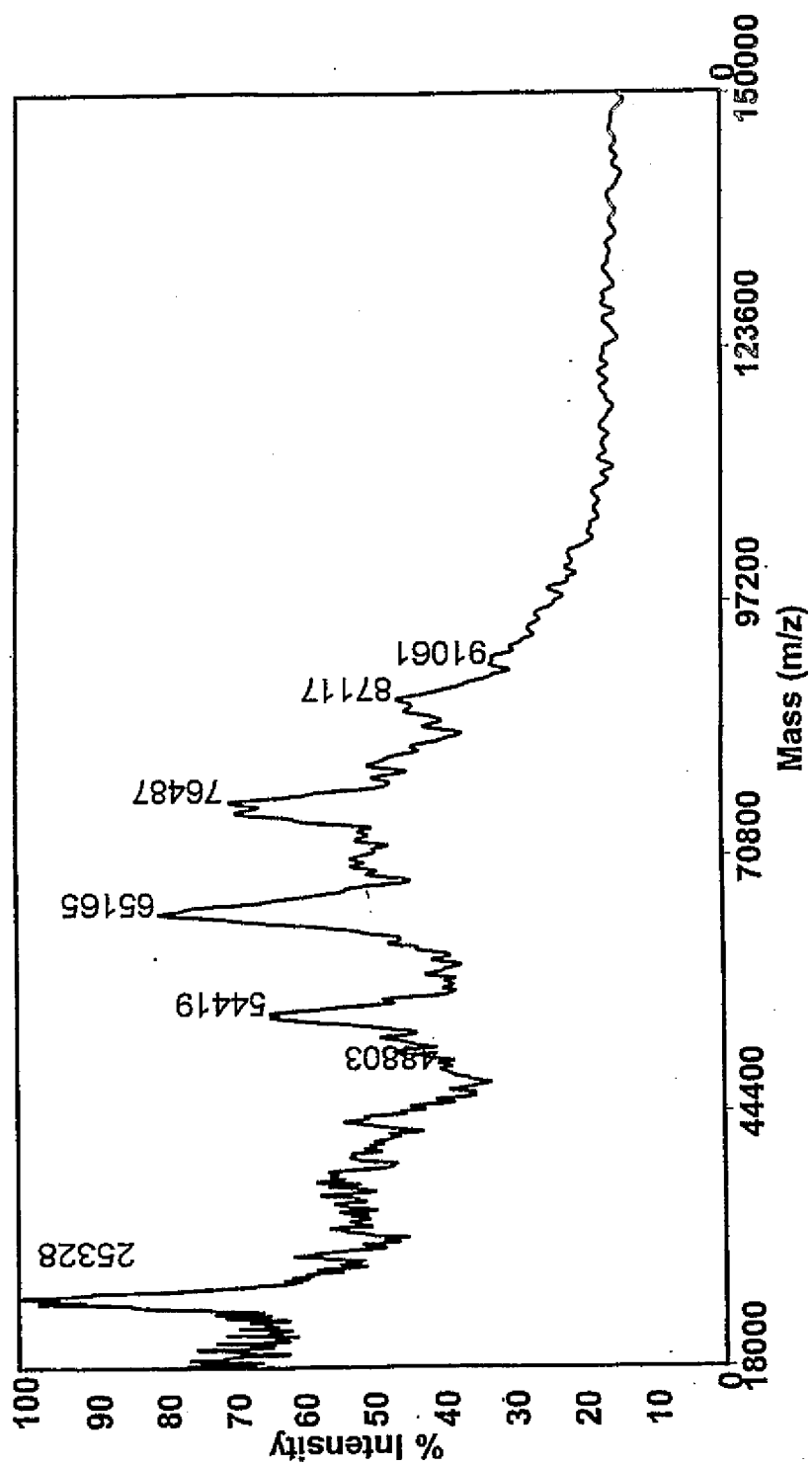


FIG. 160

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FIG. 161

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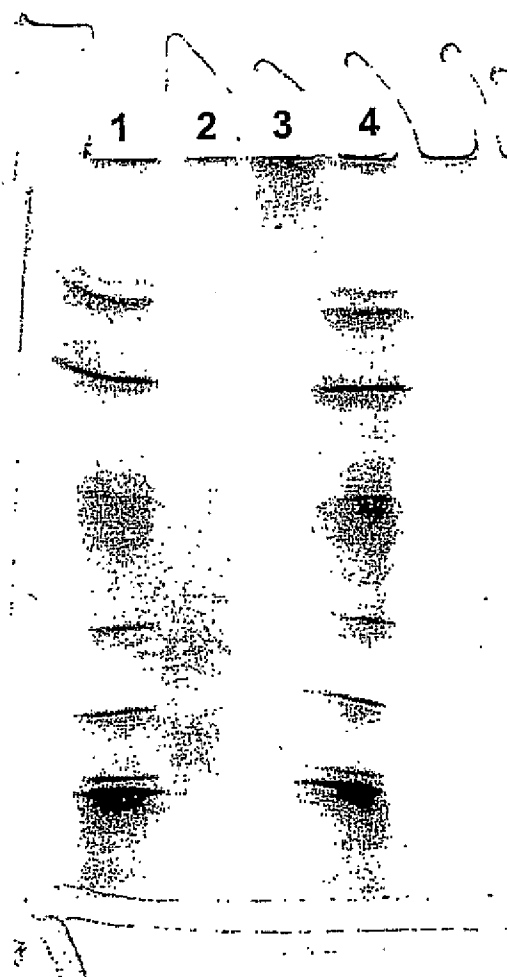


FIG. 162

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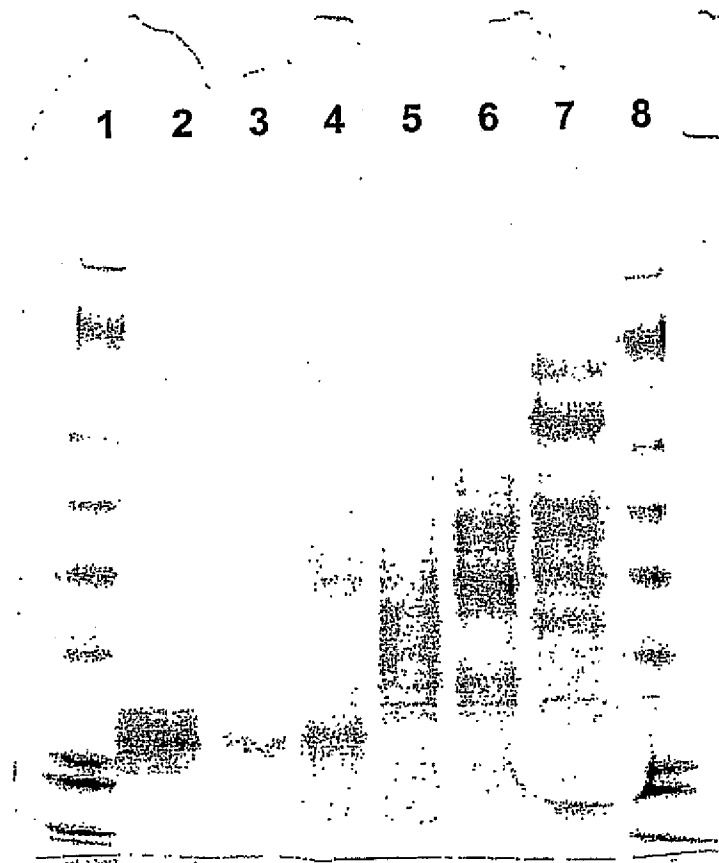


FIG. 163

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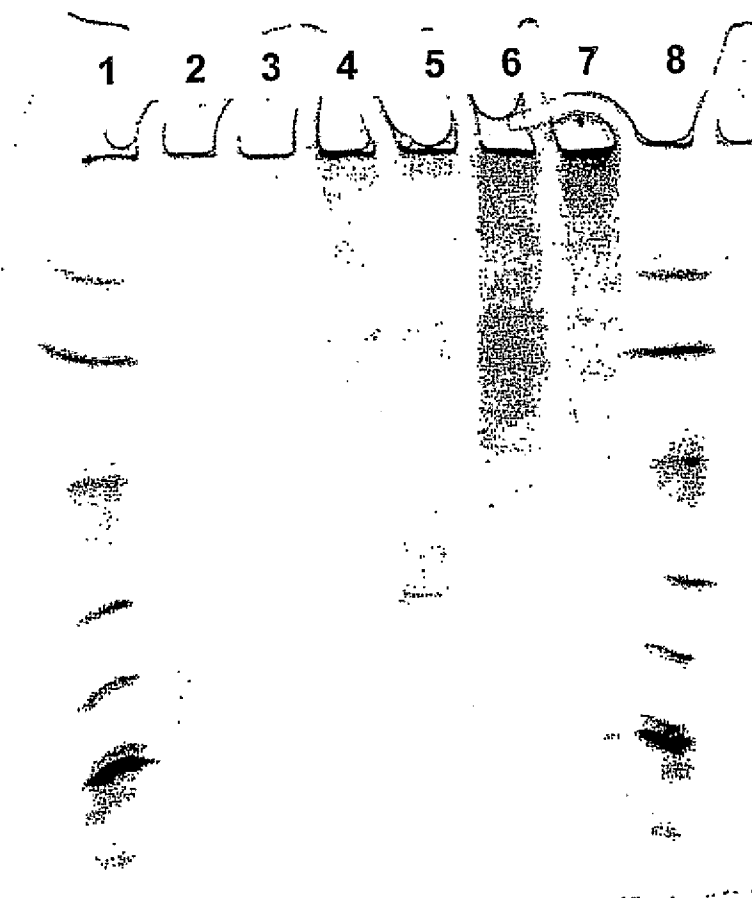


FIG. 164



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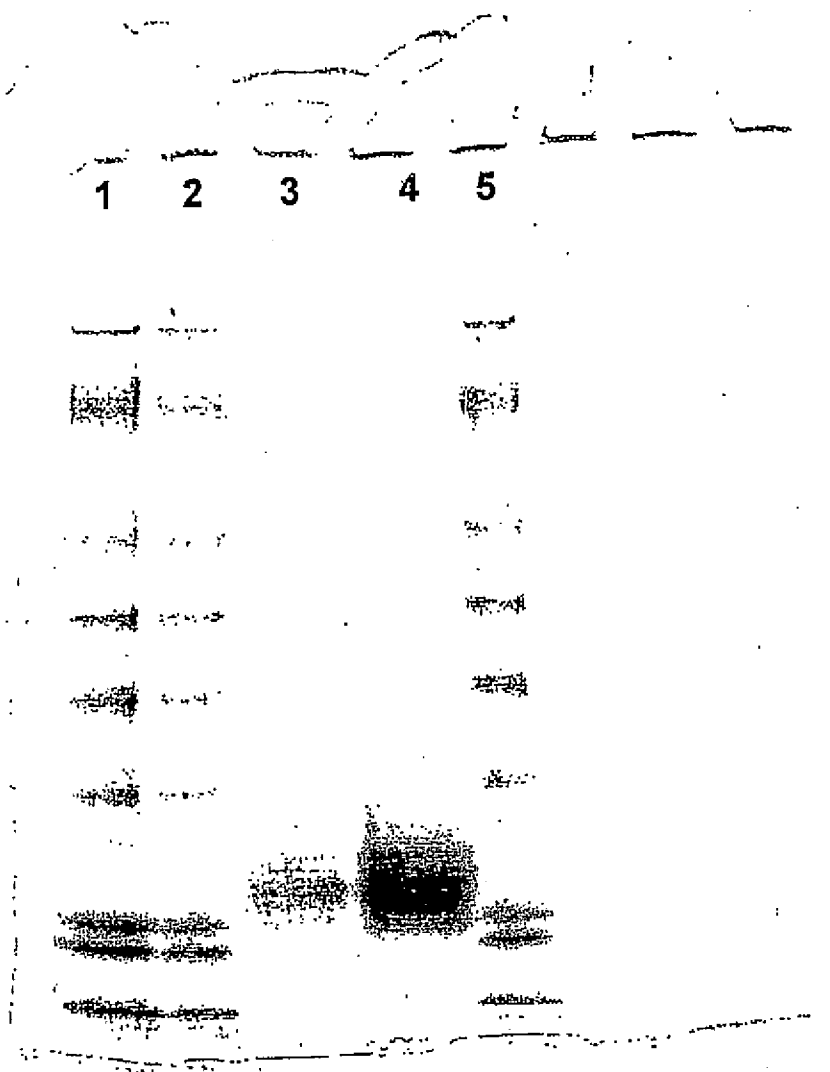


FIG. 165

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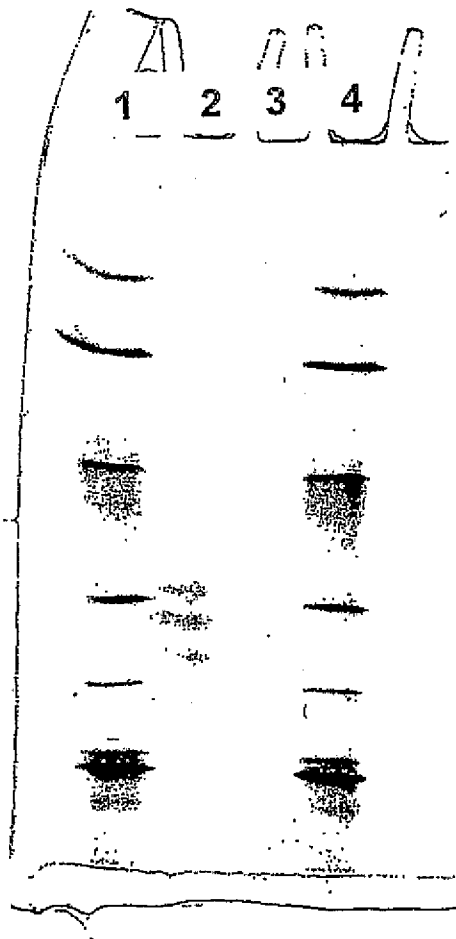


FIG. 166

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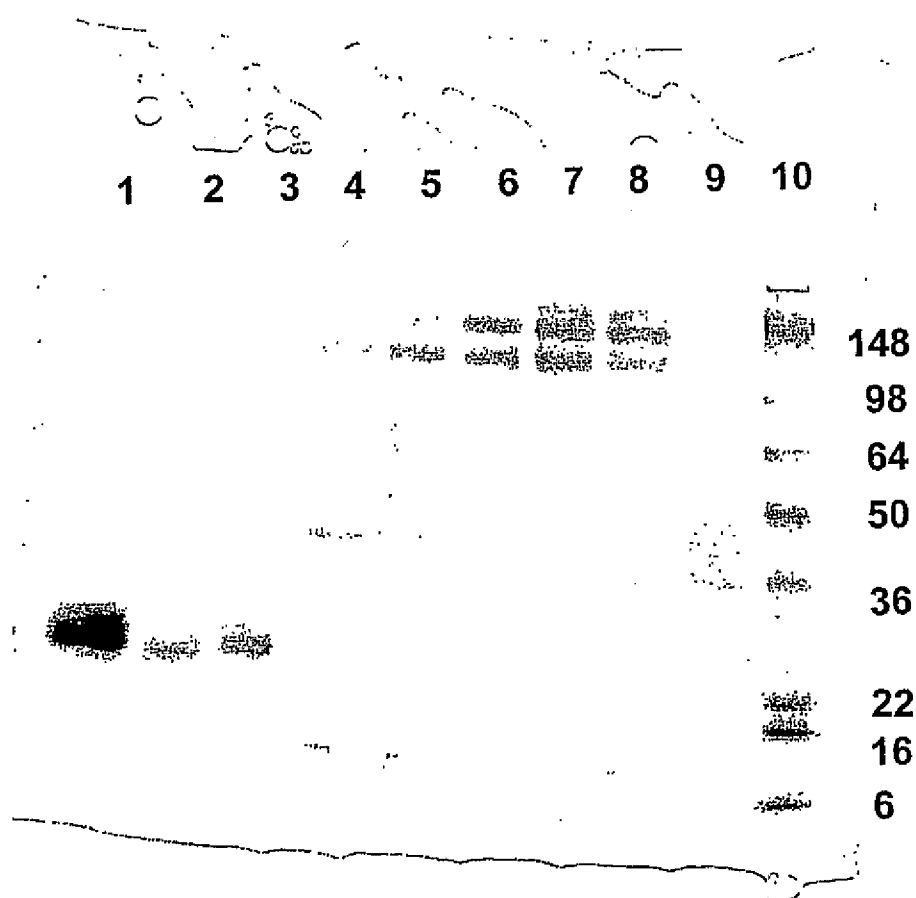


FIG. 167

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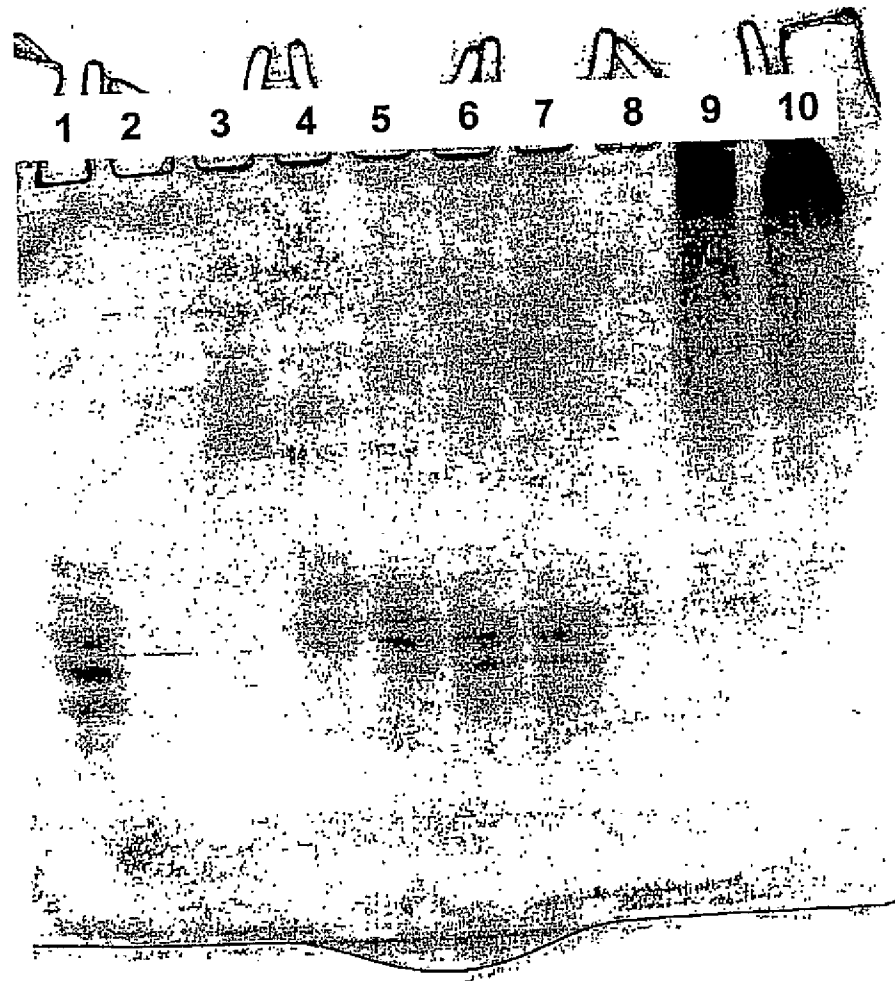


FIG. 168

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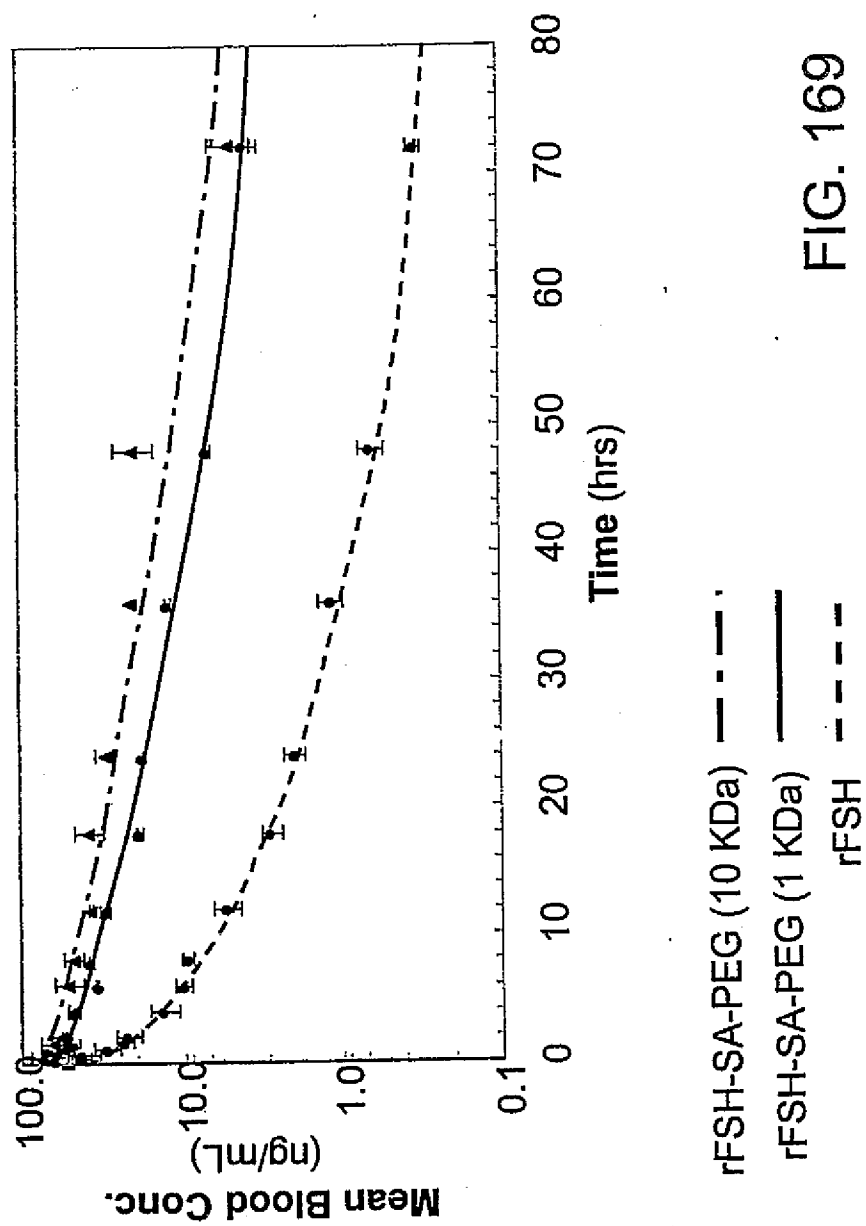


FIG. 169

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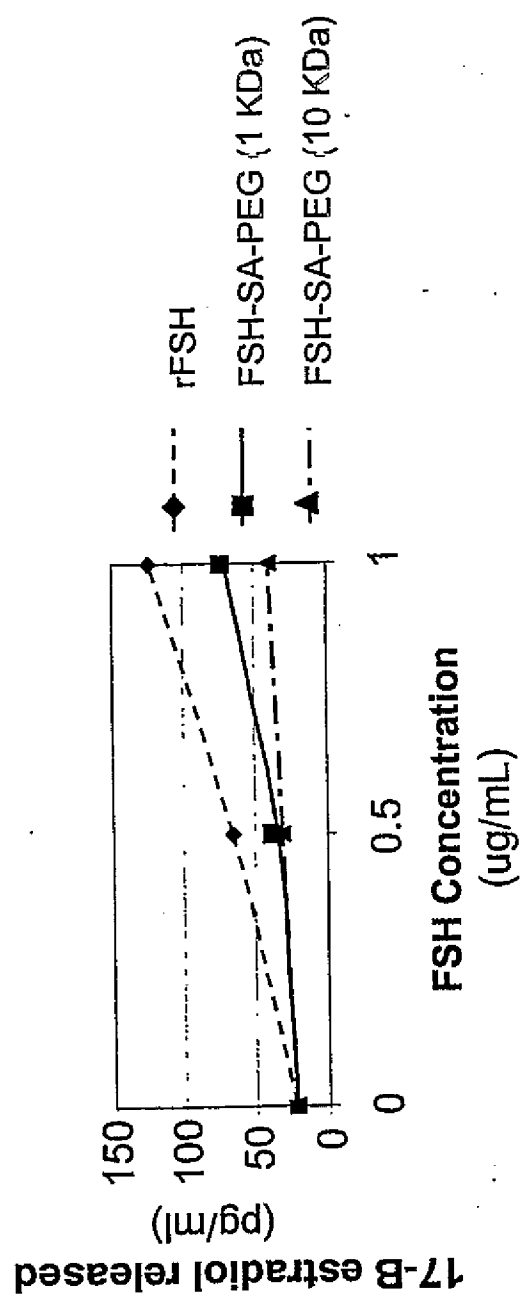


FIG. 170

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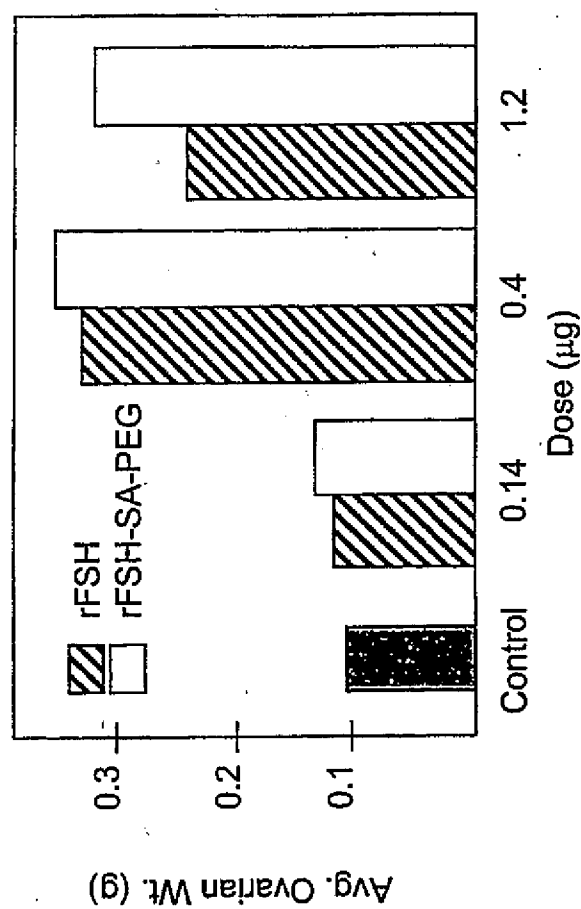


FIG. 171

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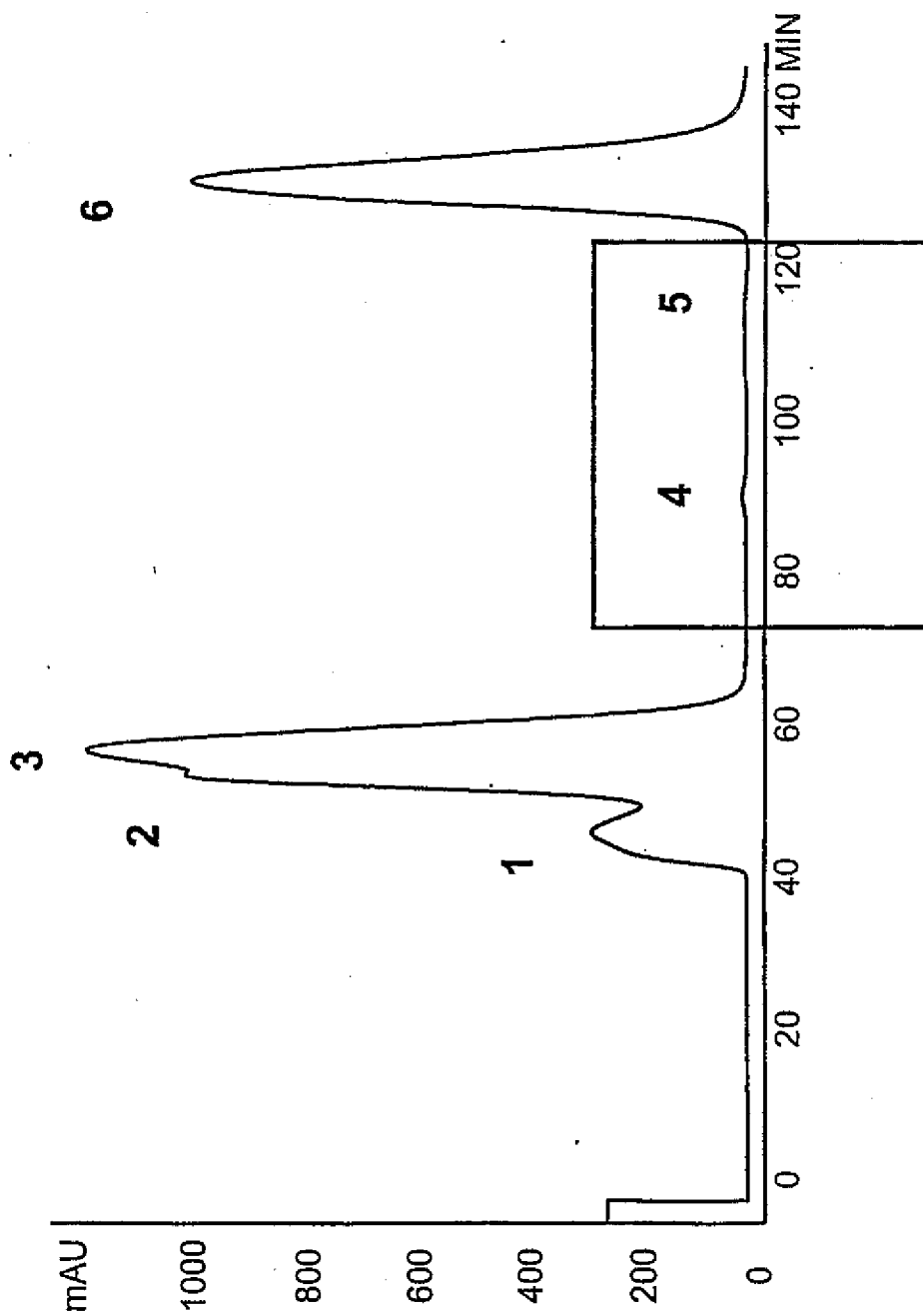


FIG. 172A



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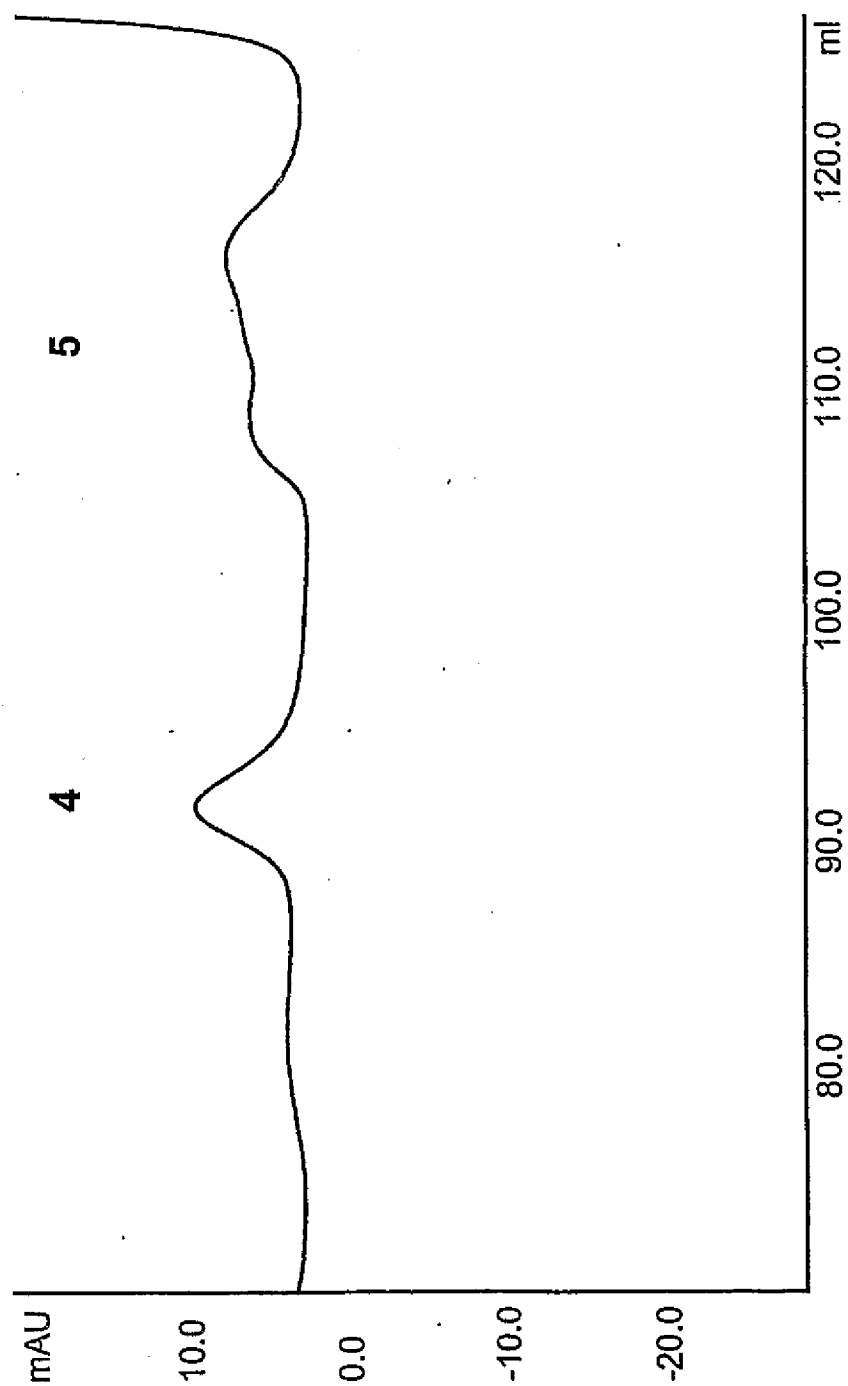


FIG. 172B

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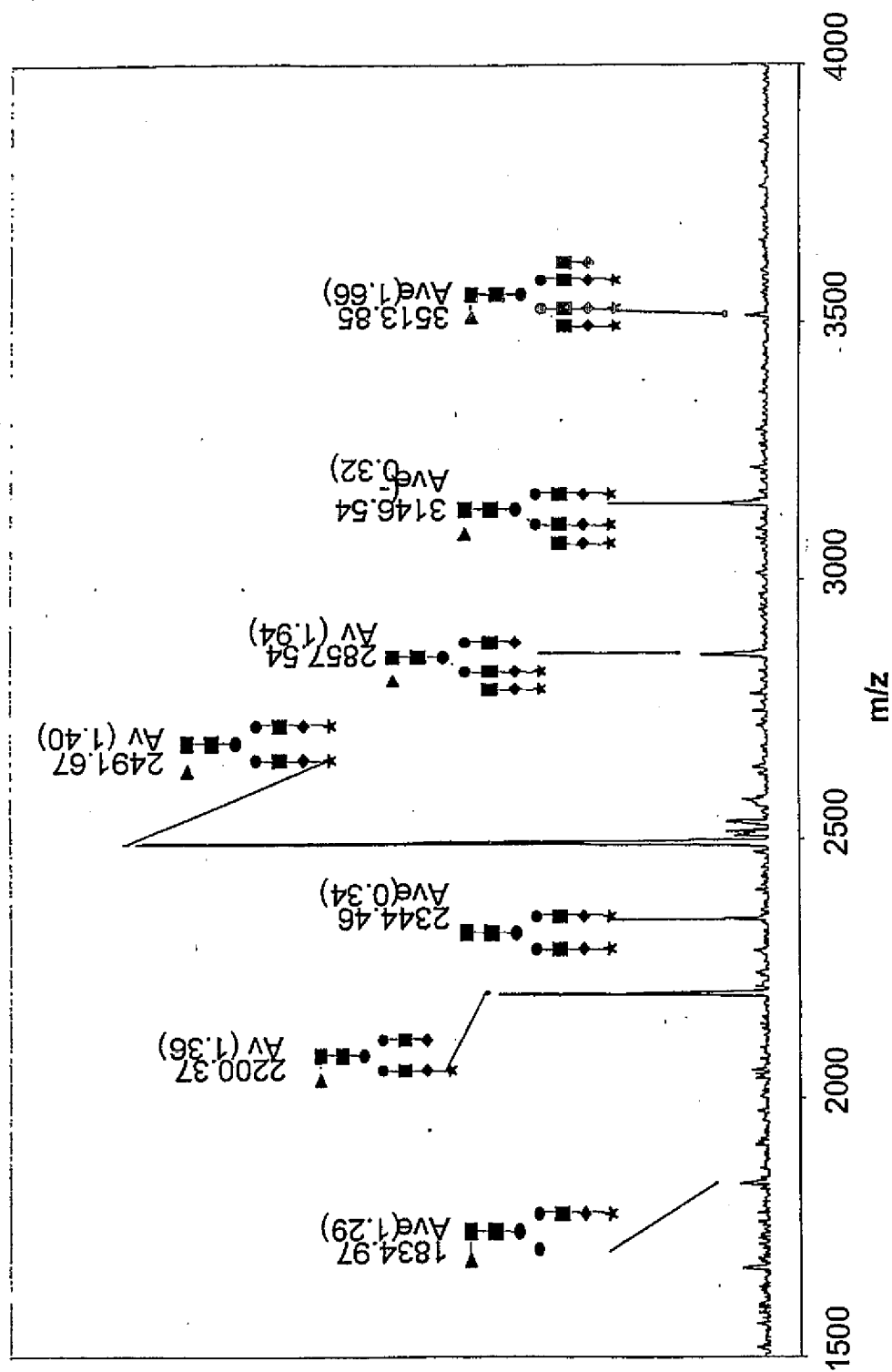


FIG. 173A

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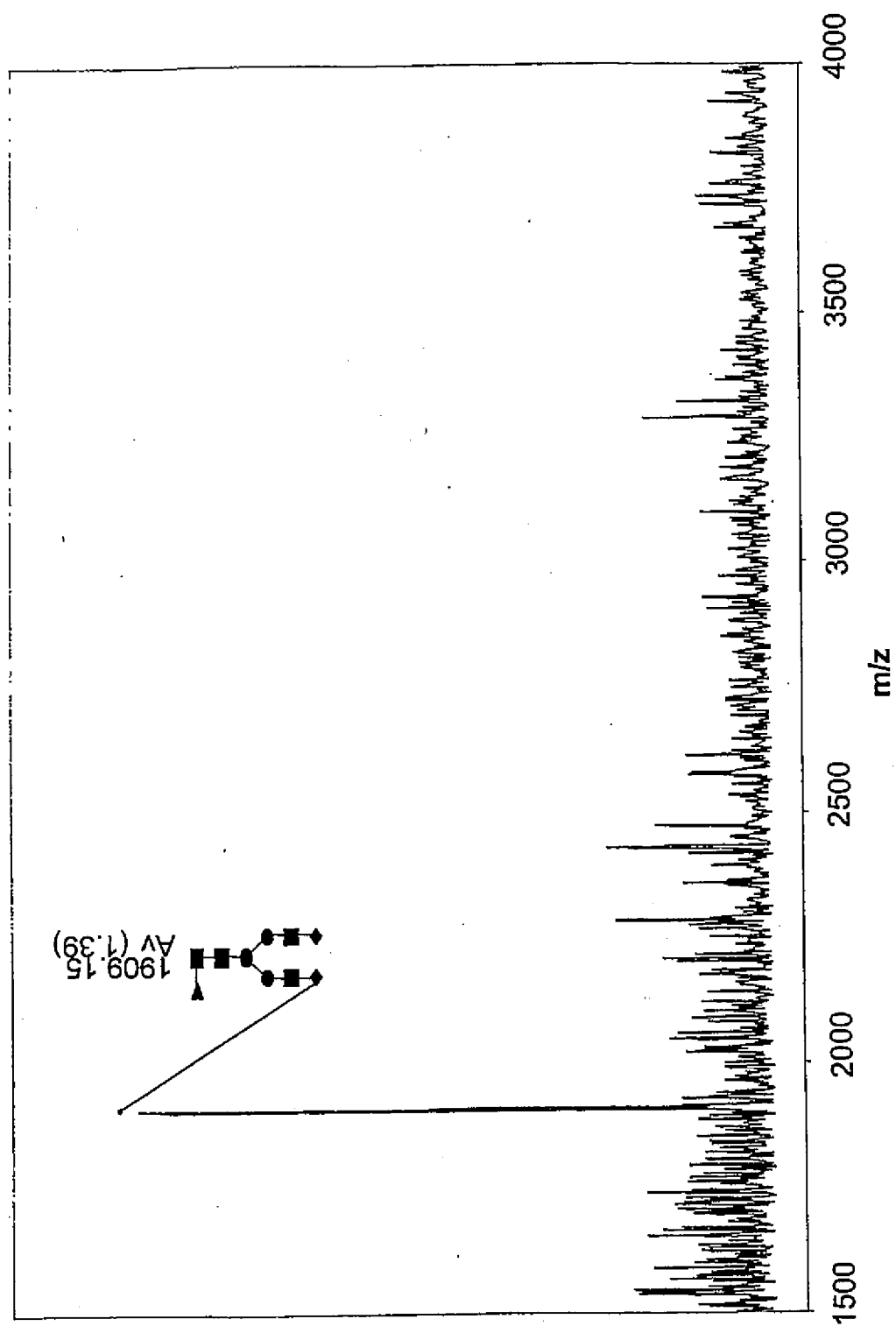


FIG. 173B

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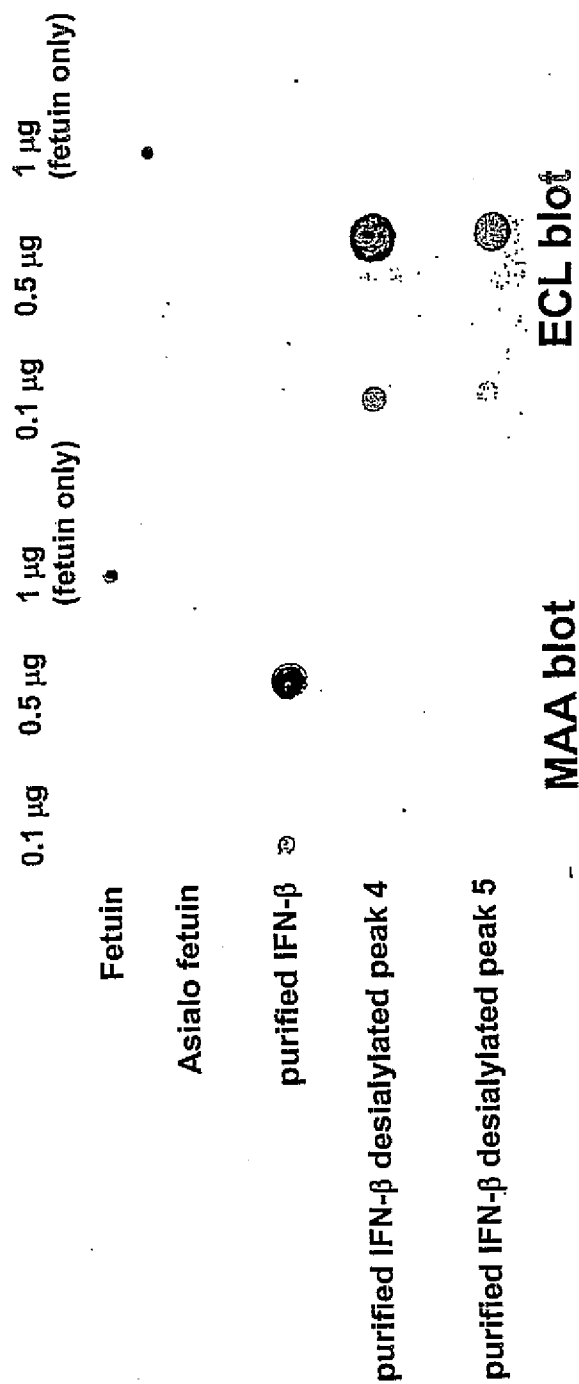


FIG. 174

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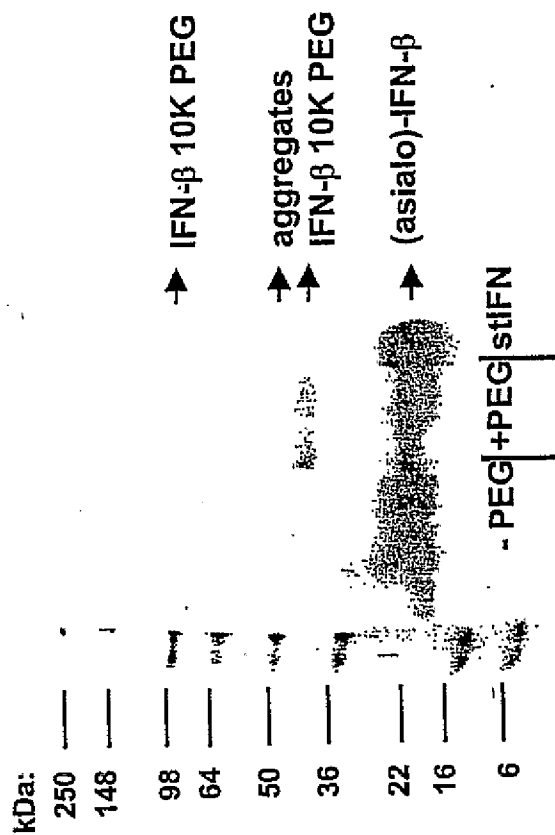


FIG. 175

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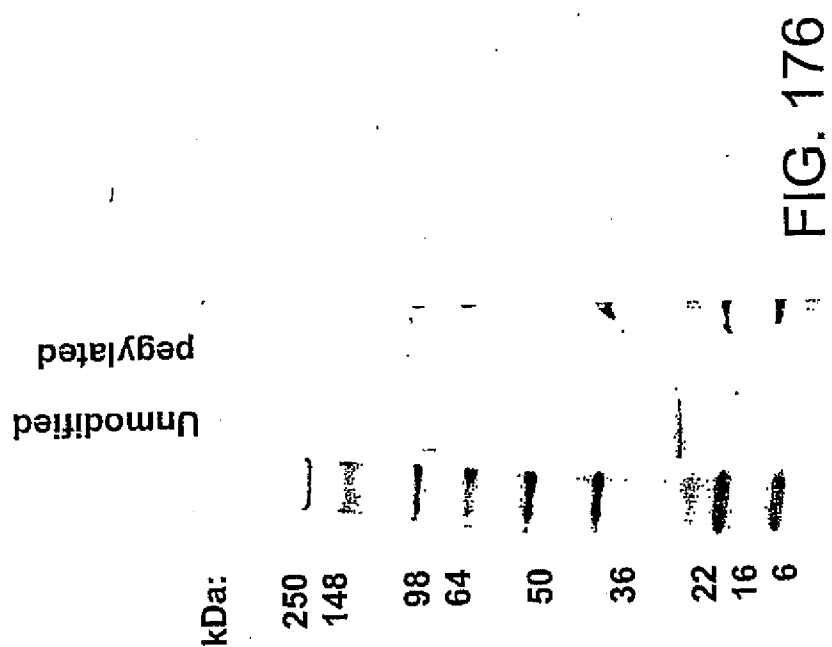


FIG. 176

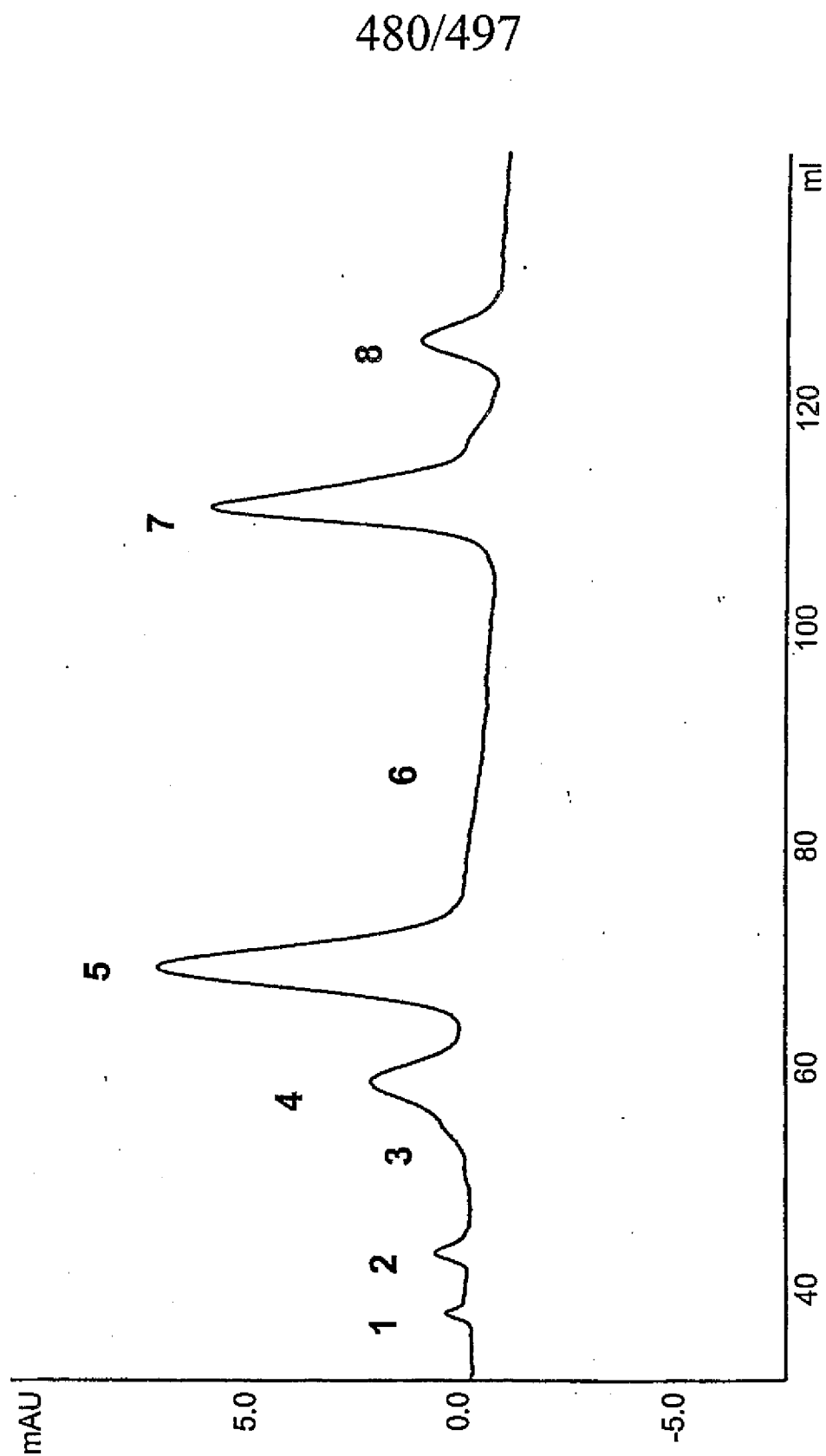


FIG. 177

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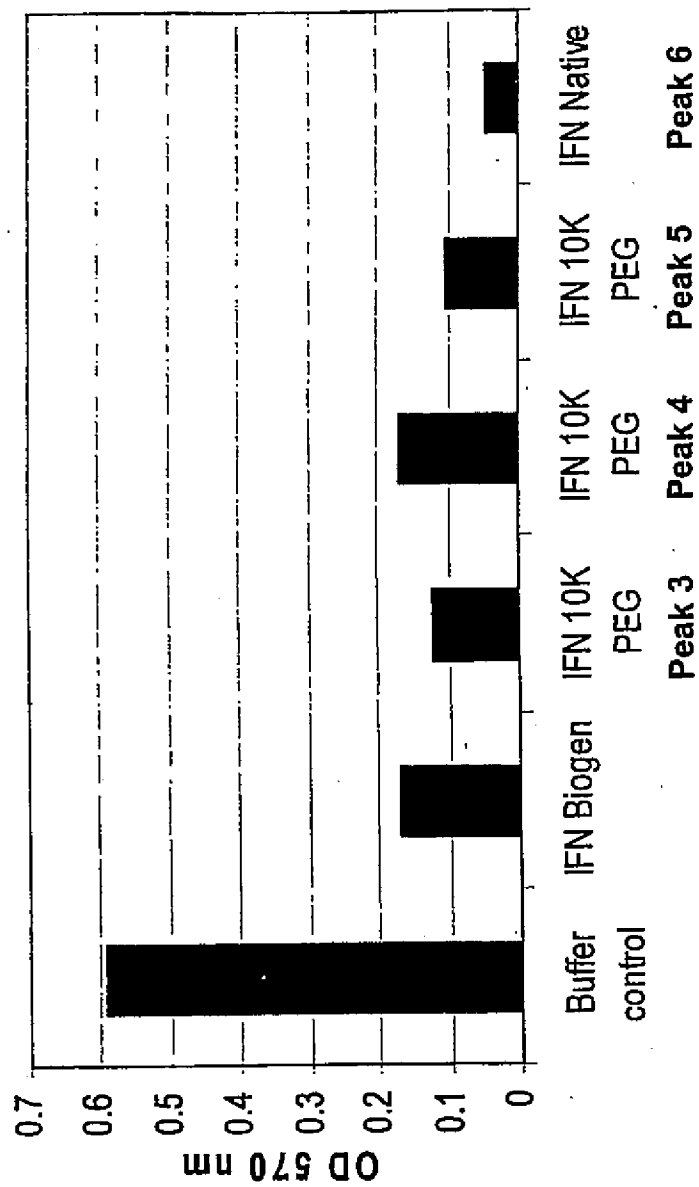


FIG. 178



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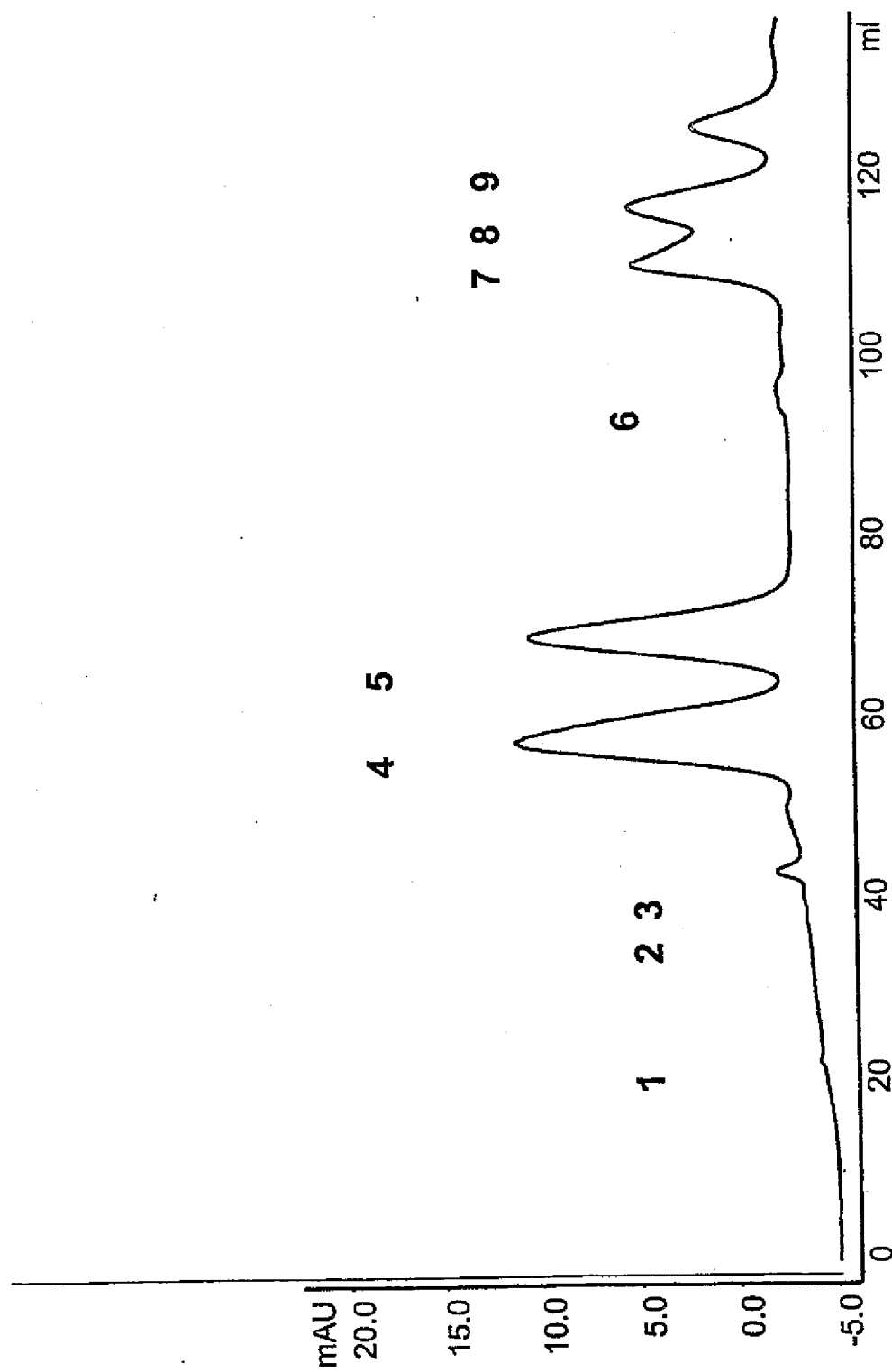


FIG. 179

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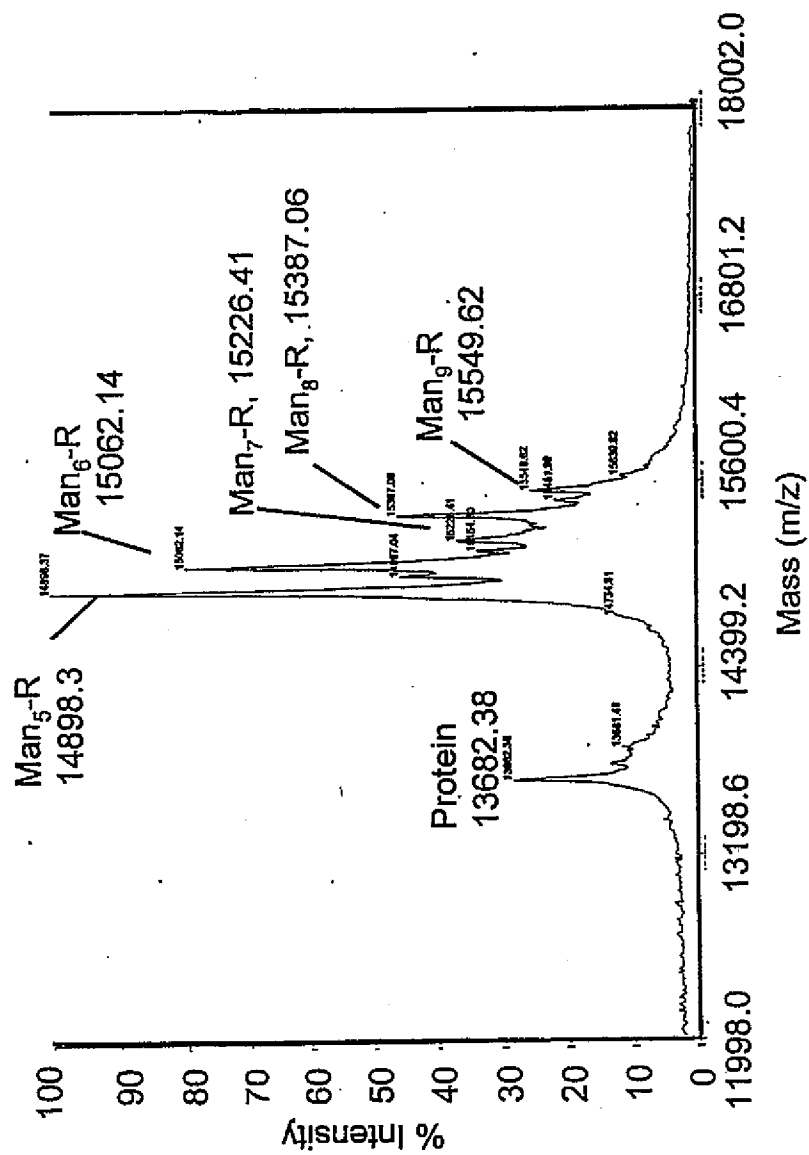


FIG. 180A

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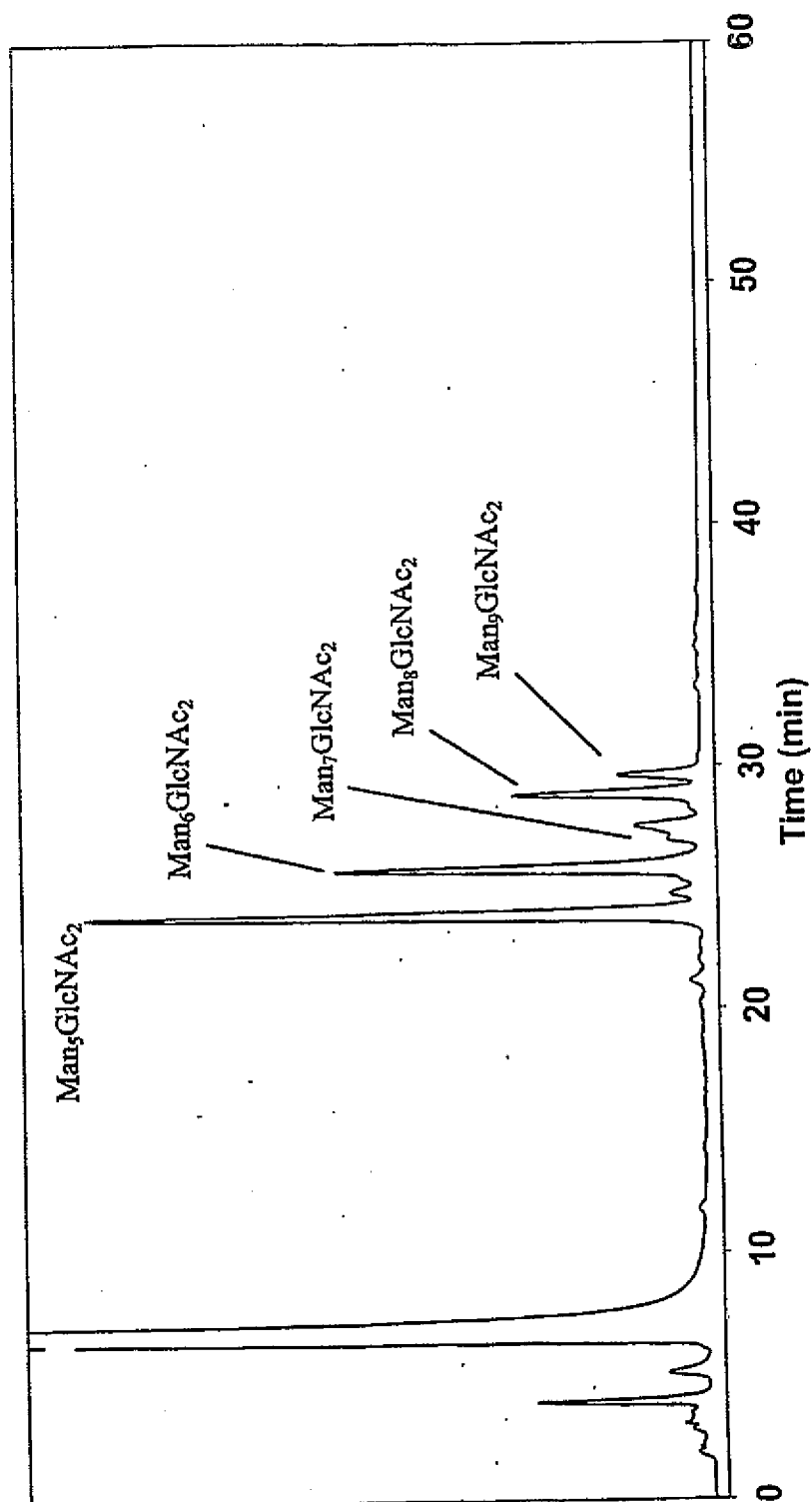


FIG. 180B

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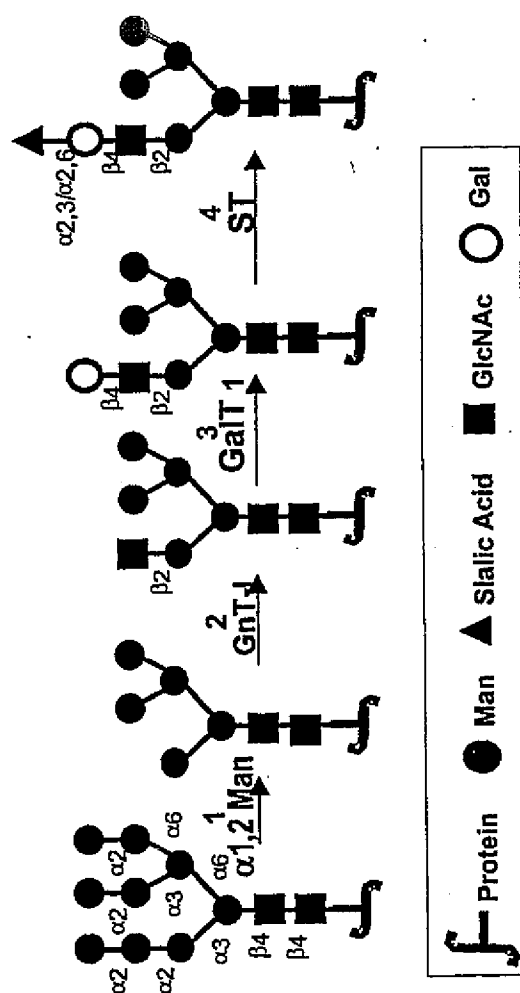


FIG. 181

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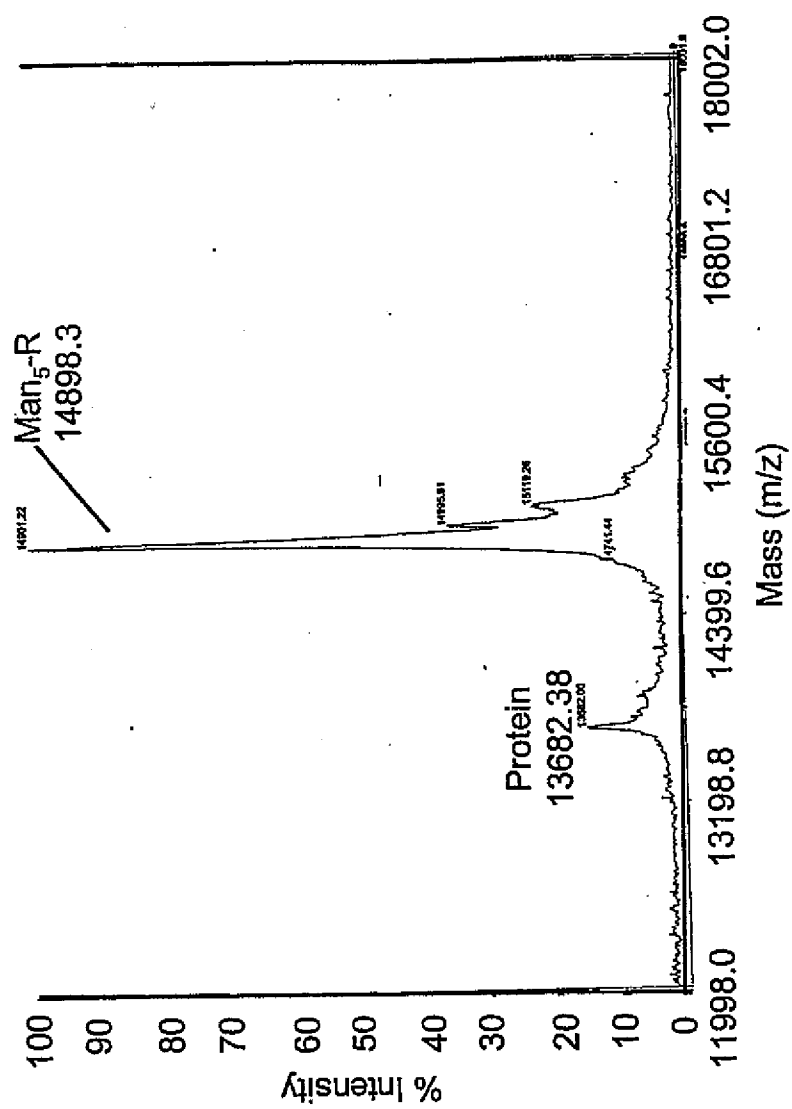


FIG. 182A

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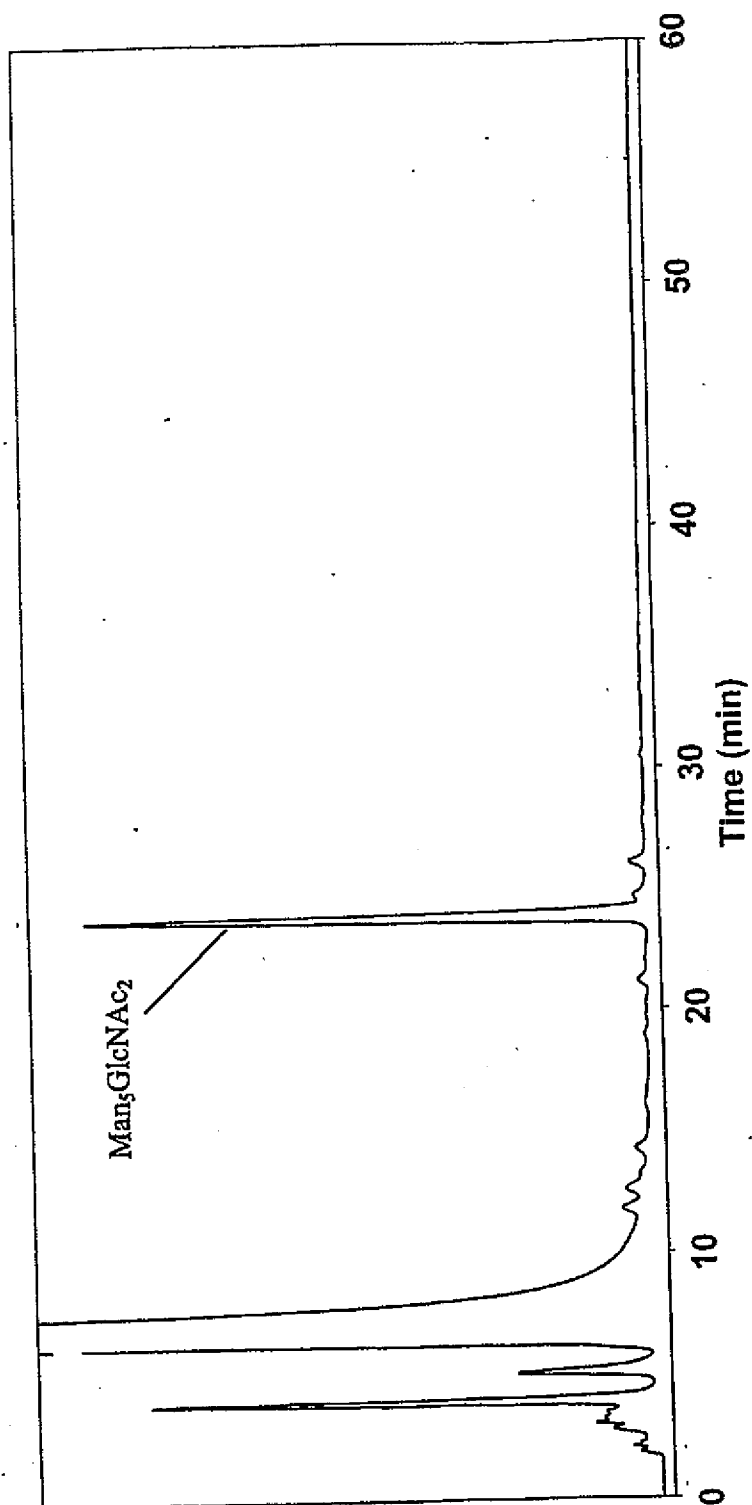


FIG. 182B

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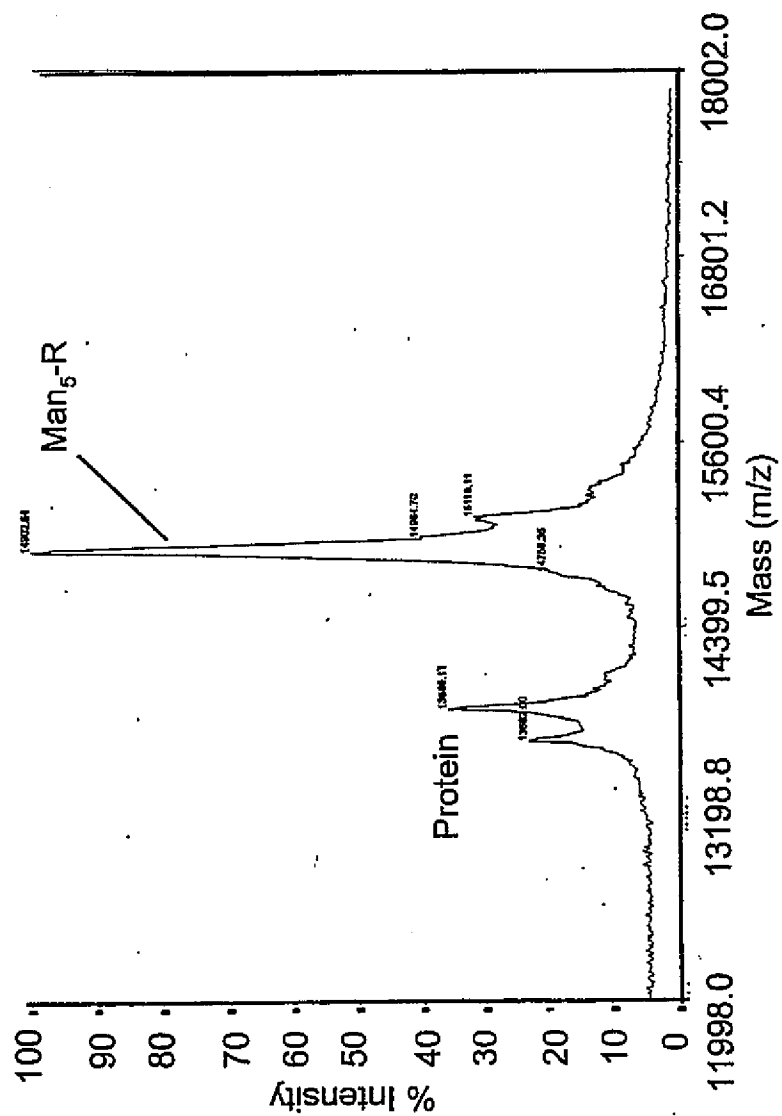


FIG. 183

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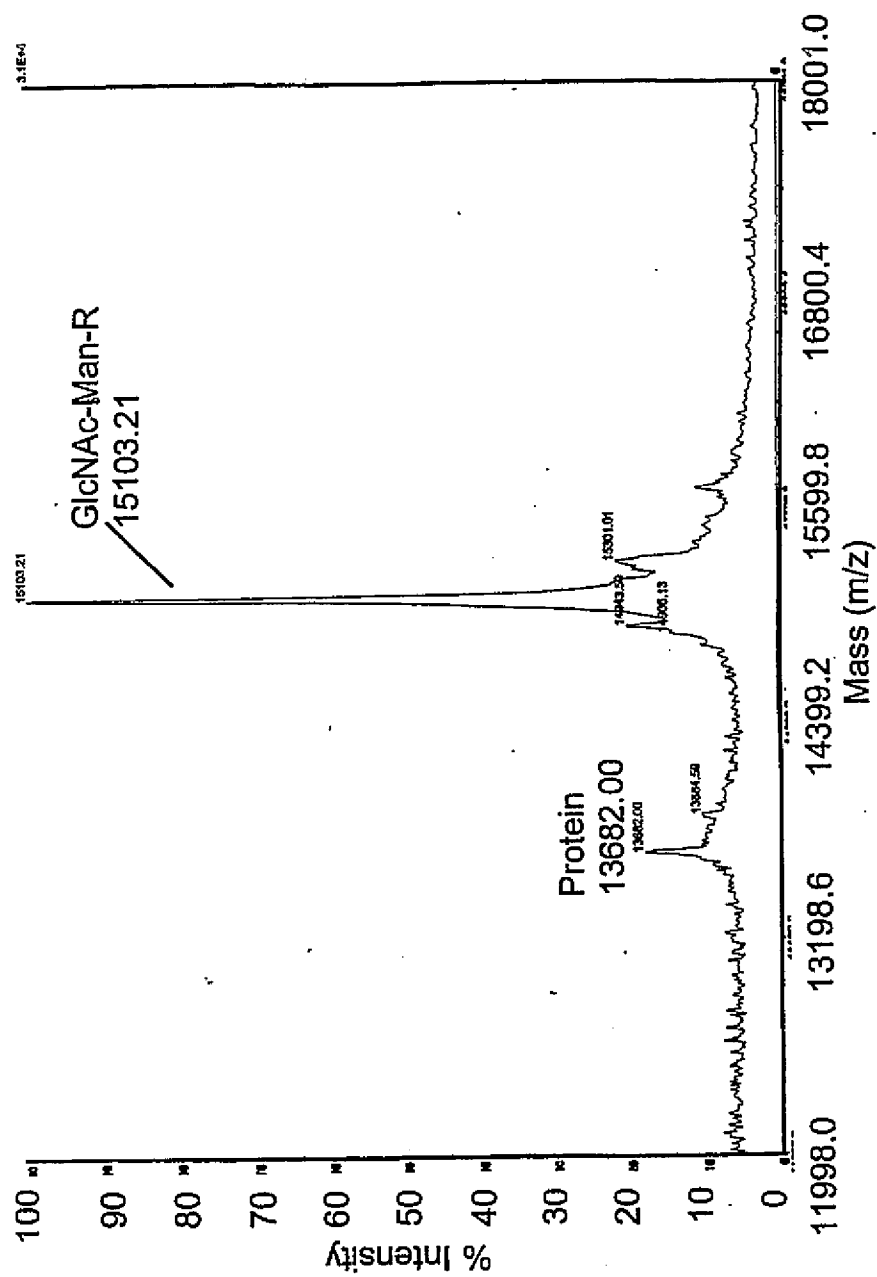


FIG. 184



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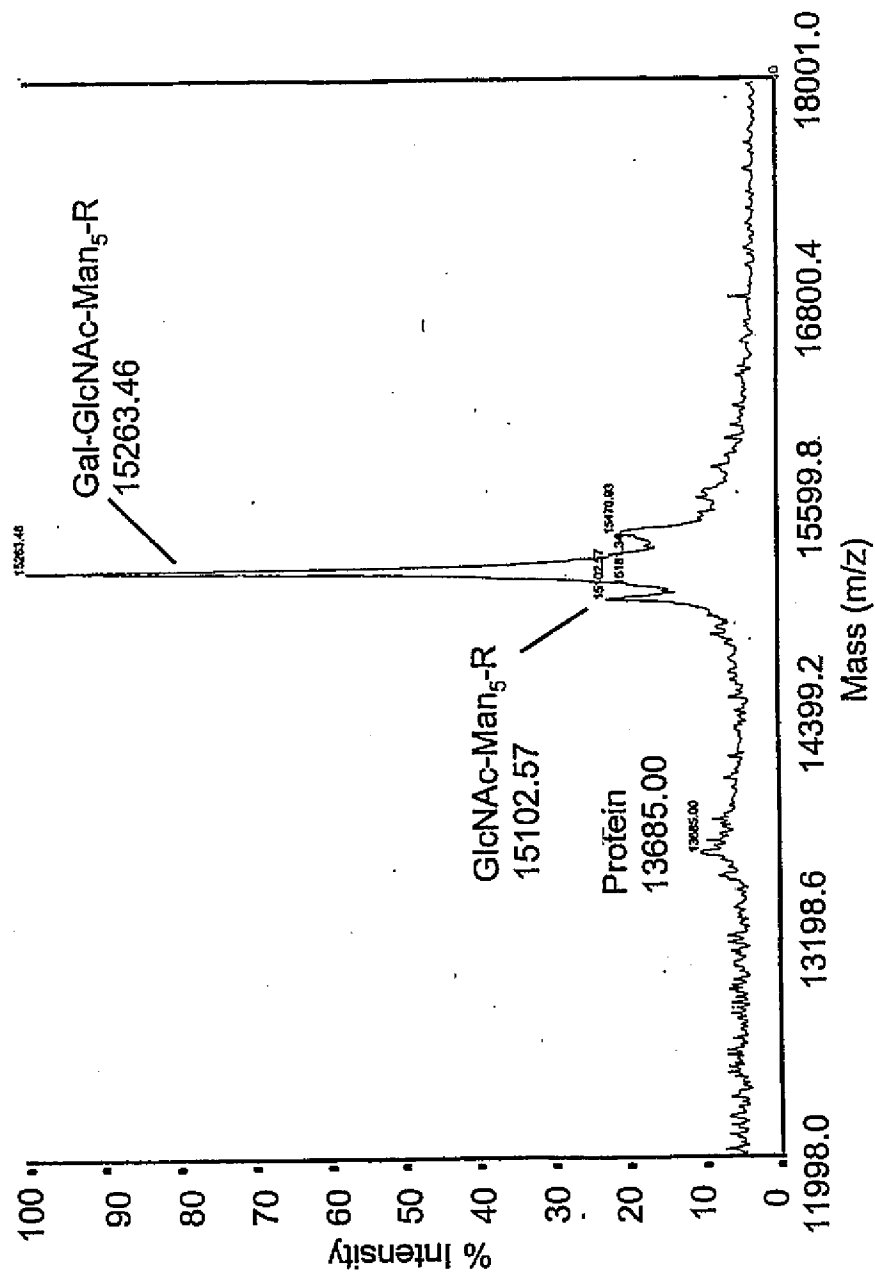


FIG. 185

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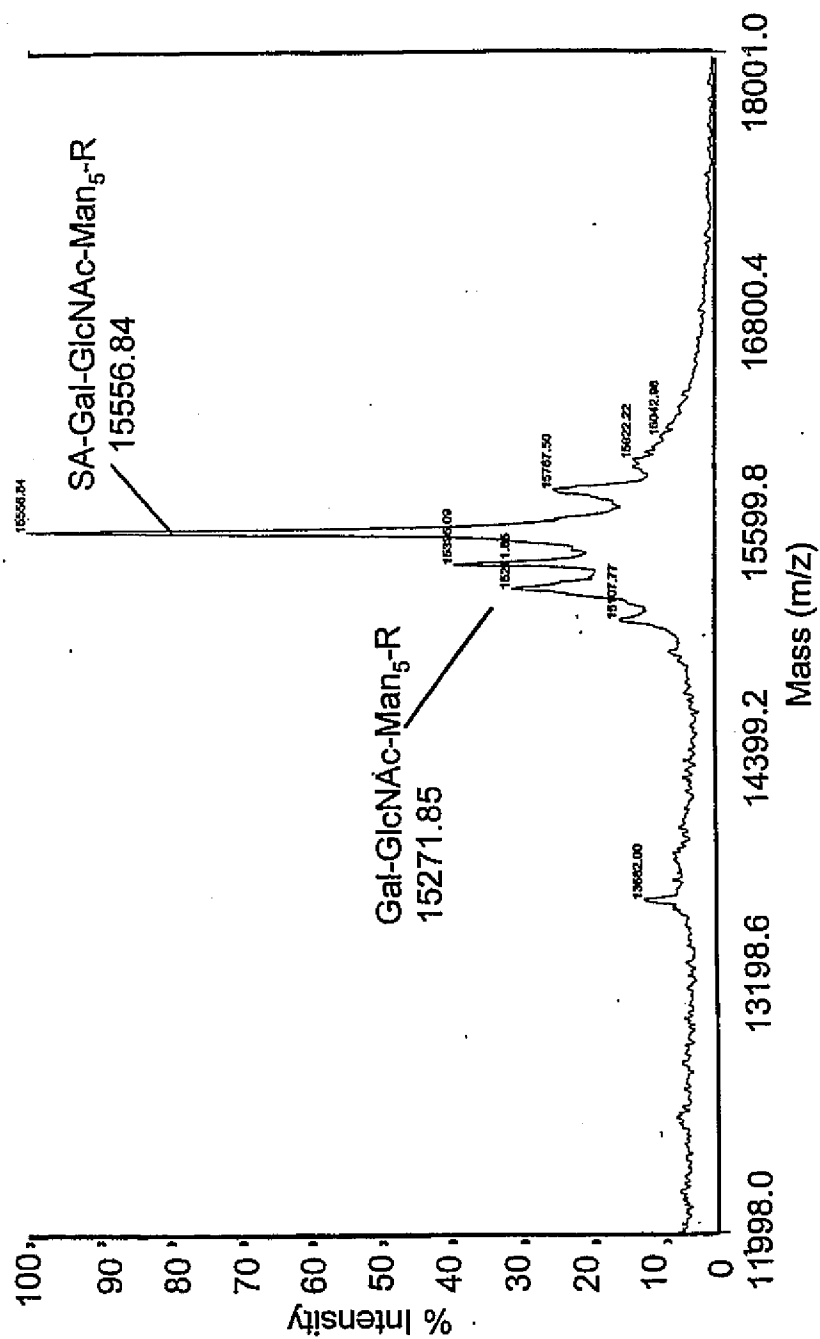


FIG. 186

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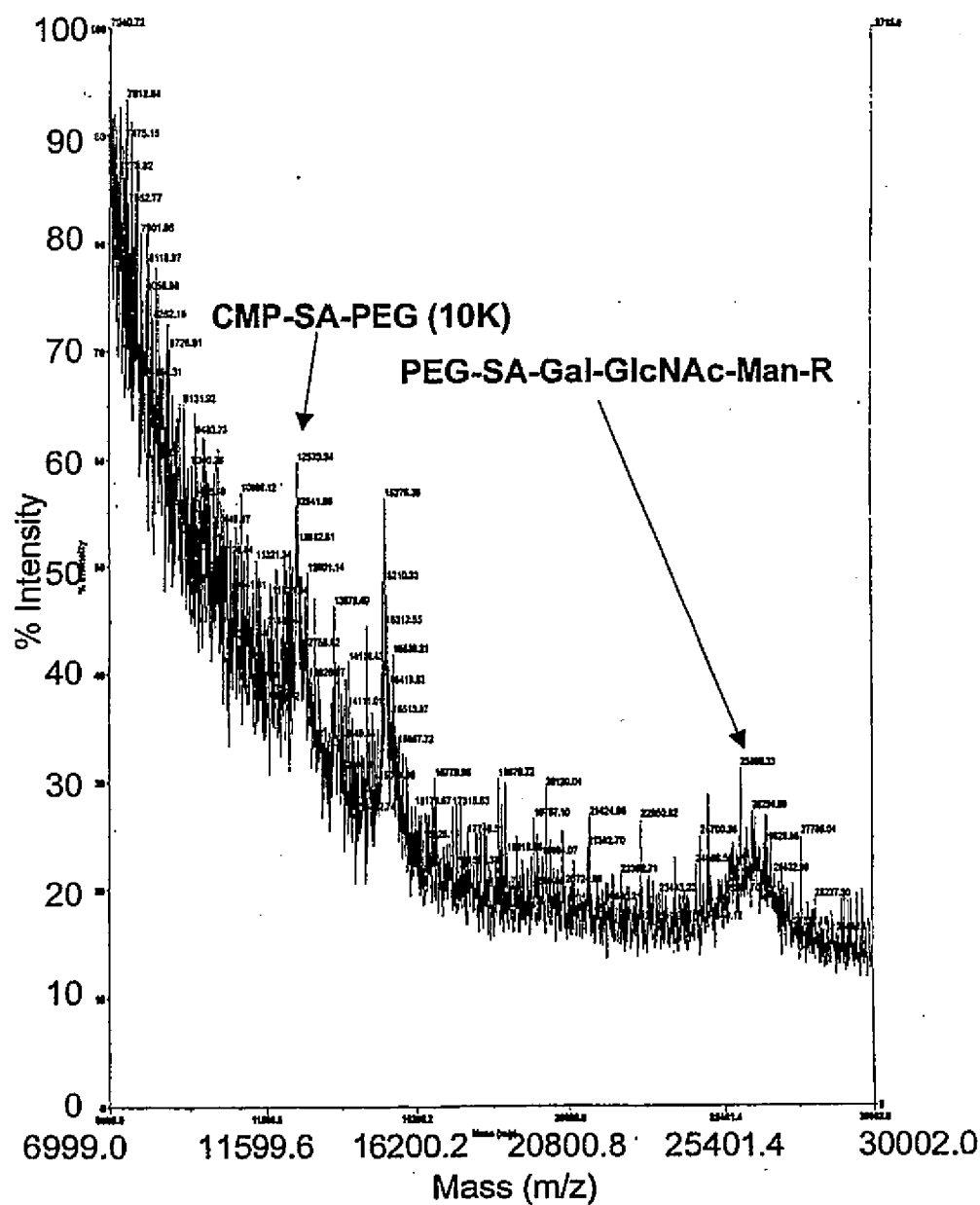


FIG. 187A



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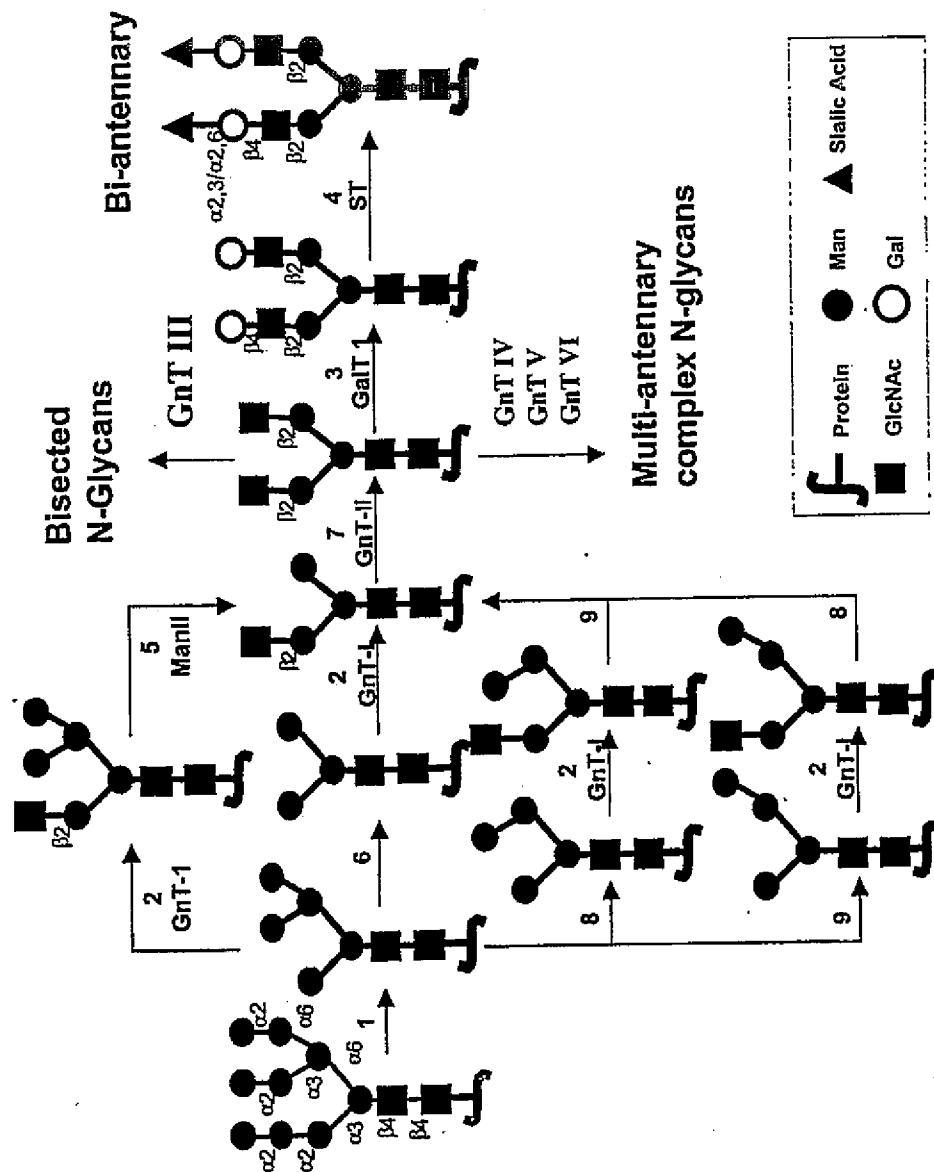


FIG. 188

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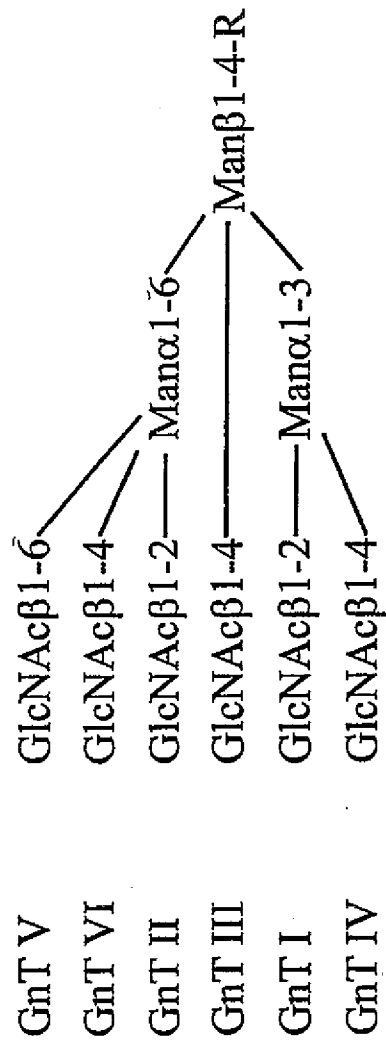


FIG. 189

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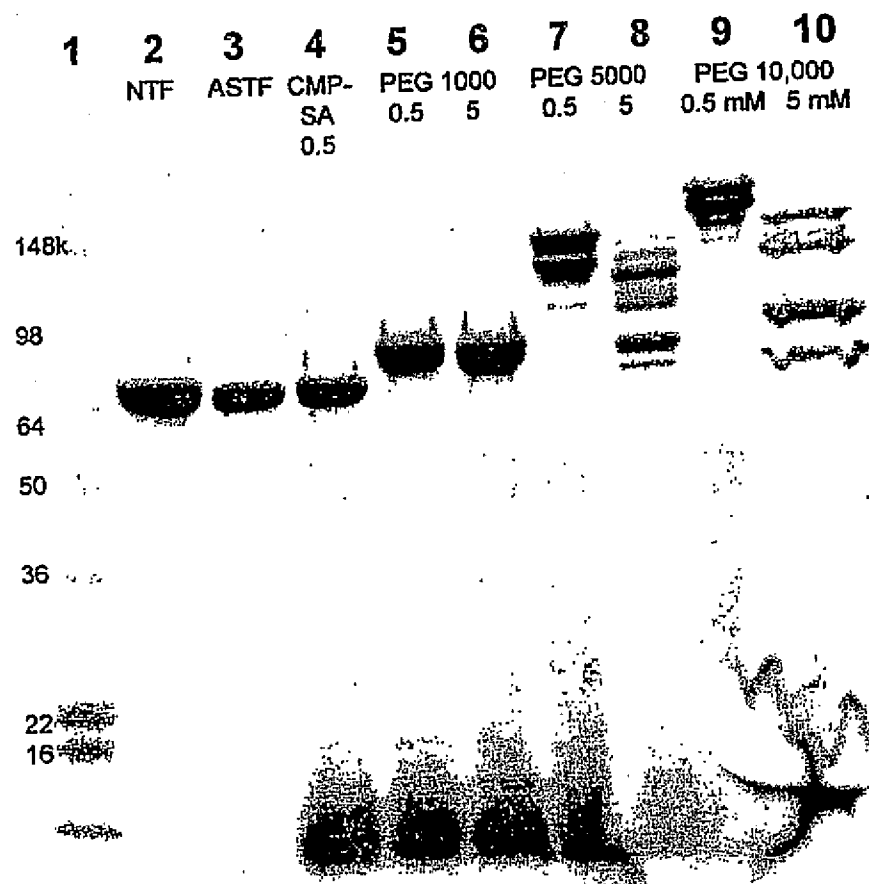


FIG. 190

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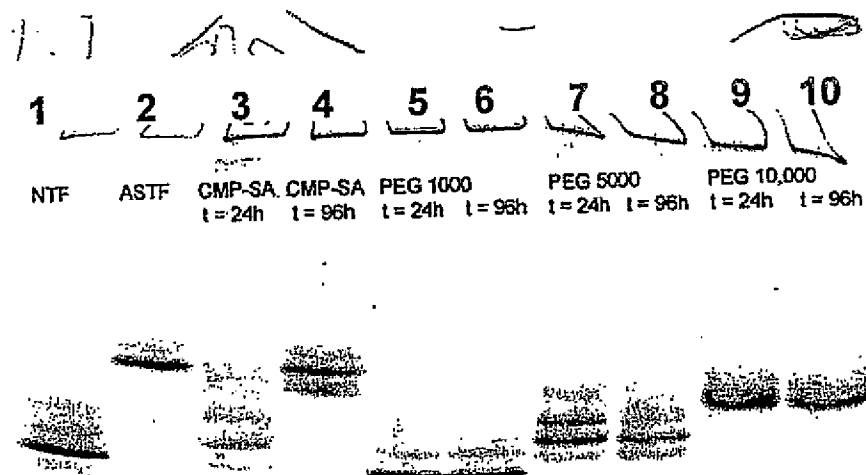


FIG. 191



## SEQUENCE LISTING

<110> Neose Technologies, Inc.  
DeFrees, Shawn  
Zopf, David  
Bayer, Robert  
Hakes, David  
Chen, Xi  
Bowe, Caryne

<120> GLYCOPEGYLATION METHODS AND PROTEINS/PEPTIDES PRODUCED BY THE  
METHODS

<130> 040853-01-5051WO

<150> US 60/328,523  
<151> 2001-10-10

<150> US 60/334,233  
<151> 2001-11-28

<150> US 60/334,301  
<151> 2001-11-28

<150> US 60/344,692  
<151> 2001-10-19

<150> US 60/387,292  
<151> 2002-06-07

<150> US 60/391,777  
<151> 2002-06-25

<150> US 60/396,594  
<151> 2002-07-17

<150> US 60/404,249  
<151> 2002-08-16

<150> US 60/407,527  
<151> 2002-08-28

<150> PCT/US02/32263  
<151> 2002-10-09

<150> US 10/360,779  
<151> 2003-02-19

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<151> 2003-01-06

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120

ctgtgccacc ccgaggagct ggtgctgctc ggacactctc tgggcatccc ctgggctccc  
180

ctgagcagct gccccagcca ggccctgcag ctggcaggct gcttgagcca actccatagc  
240

ggccttttcc tctaccaggg gctcctgcag gccctggaag ggatctcccc cgagttgggt  
300

cccaccttgg acacactgca gctggacgtc gccgactttg ccaccacat ctggcagcag  
360

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420

gcctctgctt tccagcgccg ggcaggaggg gtccctgggtg cctcccatct gcagagcttc  
480

ctggaggtgt cgtaccgcgt tctacgccac cttgcccagc cctga  
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&lt;211&gt; 174

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

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1 5 10 15

Cys Leu Glu Gln Val Arg Lys Ile Gln Gly Asp Gly Ala Ala Leu Gln  
20 25 30

Glu Lys Leu Cys Ala Thr Tyr Lys Leu Cys His Pro Glu Glu Leu Val  
35 40 45

Leu Leu Gly His Ser Leu Gly Ile Pro Trp Ala Pro Leu Ser Ser Cys  
50 55 60

Pro Ser Gln Ala Leu Gln Leu Ala Gly Cys Leu Ser Gln Leu His Ser  
65 70 75 80

Gly Leu Phe Leu Tyr Gln Gly Leu Leu Gln Ala Leu Glu Gly Ile Ser  
85 90 95

Pro Glu Leu Gly Pro Thr Leu Asp Thr Leu Gln Leu Asp Val Ala Asp  
100 105 110

Phe Ala Thr Thr Ile Trp Gln Gln Met Glu Glu Leu Gly Met Ala Pro  
115 120 125

Ala Leu Gln Pro Thr Gln Gly Ala Met Pro Ala Phe Ala Ser Ala Phe

Gln Arg Arg Ala Gly Gly Val Leu Val Ala Ser His Leu Gln Ser Phe  
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 120  
 tgcaataata aaacattaac tttatacttt ttaatttaat gtatagaata gagatataca  
 180  
 taggatatgt aaatagatac acagtgtata tgtgattaaa atataatggg agattcaatc  
 240  
 agaaaaaagt ttctaaaaag gctctggggg aaaagaggaa ggaaacaata atgaaaaaaa  
 300  
 tgtggtgaga aaaacagctg aaaacccatg taaagagtgt ataaagaaag caaaaagaga  
 360  
 agtagaaagt aacacagggg catttggaag atgtaaacga gtatgttccc tatttaaggc  
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 tcttgcttga aggacagaca tgactttgga tttccccagg aggagtttgg caaccagttc  
 720  
 caaaaggctg aaaccatccc tgtcctocat gagatgatcc agcagatctt caatctcttc  
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 ctctaccagc agctgaatga cctggaagcc tgtgtgatac aggggggtggg ggtgacagag  
 900  
 actcccctga tgaaggagga ctccattctg gctgtgagga aatacttcca aagaatcact  
 960

ctctatctga aagagaagaa atacagccct tgtgcctggg aggttgtcag agcagaaatc  
1020

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1260

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1380

gtaataaaat gtgttctttg tatttggtaa atttattttg tgttggtcat tgaacttttg  
1440

ctatggaaact ttgtacttg tttattcttt aaaatgaaat tocaagccta attgtgcaac  
1500

ctgattacag aataactggt acacttcatt tgtccatcaa tatttatatto aagatataag  
1560

taaaaataaa ctttctgtaa accaagttgt atgttgtact caagataaca ggggtgaacct  
1620

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1733

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<212> PRT  
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20 25 30  
Gly Ser Arg Arg Thr Leu Met Leu Leu Ala Gln Met Arg Arg Ile Ser  
35 40 45  
Leu Phe Ser Cys Leu Lys Asp Arg His Asp Phe Gly Phe Pro Gln Glu  
50 55 60  
Glu Phe Gly Asn Gln Phe Gln Lys Ala Glu Thr Ile Pro Val Leu His  
65 70 75 80

Glu<sup>85</sup> Met<sup>85</sup> Ile<sup>85</sup> Gln<sup>85</sup> Gln<sup>85</sup> Ile<sup>85</sup> Phe<sup>85</sup> Asn<sup>85</sup> Leu<sup>85</sup> Phe<sup>85</sup> Ser<sup>85</sup> Thr<sup>85</sup> Lys<sup>85</sup> Asp<sup>85</sup> Ser<sup>95</sup> Ser<sup>95</sup>

Ala<sup>100</sup> Ala<sup>100</sup> Trp<sup>100</sup> Asp<sup>100</sup> Glu<sup>100</sup> Thr<sup>100</sup> Leu<sup>100</sup> Leu<sup>100</sup> Asp<sup>105</sup> Lys<sup>105</sup> Phe<sup>105</sup> Tyr<sup>105</sup> Thr<sup>105</sup> Glu<sup>110</sup> Leu<sup>110</sup> Tyr<sup>110</sup>

Gln<sup>115</sup> Gln<sup>115</sup> Leu<sup>115</sup> Asn<sup>115</sup> Asp<sup>115</sup> Leu<sup>115</sup> Glu<sup>115</sup> Ala<sup>120</sup> Cys<sup>120</sup> Val<sup>120</sup> Ile<sup>120</sup> Gln<sup>125</sup> Gly<sup>125</sup> Val<sup>125</sup> Gly<sup>125</sup> Val<sup>125</sup>

Thr<sup>130</sup> Glu<sup>130</sup> Thr<sup>130</sup> Pro<sup>130</sup> Leu<sup>130</sup> Met<sup>130</sup> Lys<sup>135</sup> Glu<sup>135</sup> Asp<sup>135</sup> Ser<sup>135</sup> Ile<sup>135</sup> Leu<sup>140</sup> Ala<sup>140</sup> Val<sup>140</sup> Arg<sup>140</sup> Lys<sup>140</sup>

Tyr<sup>145</sup> Phe<sup>145</sup> Gln<sup>145</sup> Arg<sup>145</sup> Ile<sup>145</sup> Thr<sup>150</sup> Leu<sup>150</sup> Tyr<sup>150</sup> Leu<sup>150</sup> Lys<sup>155</sup> Glu<sup>155</sup> Lys<sup>155</sup> Lys<sup>155</sup> Tyr<sup>155</sup> Ser<sup>160</sup> Pro<sup>160</sup>

Cys<sup>165</sup> Ala<sup>165</sup> Trp<sup>165</sup> Glu<sup>165</sup> Val<sup>165</sup> Val<sup>165</sup> Arg<sup>165</sup> Ala<sup>165</sup> Glu<sup>170</sup> Ile<sup>170</sup> Met<sup>170</sup> Arg<sup>170</sup> Ser<sup>170</sup> Phe<sup>175</sup> Ser<sup>175</sup> Leu<sup>175</sup>

Ser<sup>180</sup> Thr<sup>180</sup> Asn<sup>180</sup> Leu<sup>180</sup> Gln<sup>180</sup> Glu<sup>180</sup> Ser<sup>185</sup> Leu<sup>185</sup> Arg<sup>185</sup> Ser<sup>185</sup> Lys<sup>185</sup> Glu<sup>185</sup>

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120

ctctgtggc aattgaatgg gaggcttgaa tattgcctca aggacaggat gaactttgac  
180

atccctgagg agattaagca gctgcagcag ttccagaagg aggaogcgc attgaccatc  
240

tatgagatgc tccagaacat ctttgctatt ttccagacaag attcatctag cactggctgg  
300

aatgagacta ttgttgagaa cctcctggct aatgtctatc atcagataaa ccatctgaag  
360

acagtccctgg aagaaaaact ggagaaagaa gattttacca ggggaaaact catgagcagt  
420

ctgcacctga aaagatatta tgggaggatt ctgcattacc tgaaggccaa ggagtacagt  
480

cactgtgcct ggaccatagt cagagtggaa atoctaagga acttttactt cattaacaga  
540

cttacagggtt acctccgaaa ctgaagatct cctagcctgt ccctctggga ctggacaatt  
600

gcttcaagca ttcttcaacc agcagatgct gtttaagtga ctgatggcta atgtactgca  
660

aatgaaagga cactagaaga ttttgaaatt tttattaaat tatgagttat ttttatttat  
720

ttaaatttta ttttgaaaa taaattattt ttggtgc  
757

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<213> Homo sapiens

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20 25 30  
Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg  
35 40 45  
Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu  
50 55 60  
Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile  
65 70 75 80  
Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser  
85 90 95  
Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val  
100 105 110  
Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu  
115 120 125  
Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys  
130 135 140  
Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser  
145 150 155 160  
His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr  
165 170 175  
Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn  
180 185

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120

gcgttcctgg aggagctgcg gccgggctcc ctggagaggg agtgcaagga ggagcagtgc  
180

tccttcgagg agggccggga gatcttcaag gacgcggaga ggacgaagct gttctggatt  
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tcttacagtg atggggacca gtgtgcctca agtccatgcc agaatggggg ctcttgcaag  
300

gaccagctcc agtctatat ctgcttctgc ctccctgcct tcgagggccg gaactgtgag  
360

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420

agtgaccaca cgggcaccaa gcgctcctgt cggtgccacg aggggtactc tctgctggca  
480

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540

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600

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<212> PRT  
<213> Homo sapiens

<400> 8  
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Leu His Arg Arg Arg Arg Ala Asn Ala Phe Leu Glu Glu Leu Arg Pro  
35 40 45  
Gly Ser Leu Glu Arg Glu Cys Lys Glu Glu Gln Cys Ser Phe Glu Glu  
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Ala Arg Glu Ile Phe Lys Asp Ala Glu Arg Thr Lys Leu Phe Trp Ile  
65 70 75 80  
Ser Tyr Ser Asp Gly Asp Gln Cys Ala Ser Ser Pro Cys Gln Asn Gly  
85 90 95  
Gly Ser Cys Lys Asp Gln Leu Gln Ser Tyr Ile Cys Phe Cys Leu Pro  
100 105 110  
Ala Phe Glu Gly Arg Asn Cys Glu Thr His Lys Asp Asp Gln Leu Ile  
115 120 125  
Cys Val Asn Glu Asn Gly Gly Cys Glu Gln Tyr Cys Ser Asp His Thr  
130 135 140  
Gly Thr Lys Arg Ser Cys Arg Cys His Glu Gly Tyr Ser Leu Leu Ala  
145 150 155 160  
Asp Gly Val Ser Cys Thr Pro Thr Val Glu Tyr Pro Cys Gly Lys Ile  
165 170 175  
Pro Ile Leu Glu Lys Arg Asn Ala Ser Lys Pro Gln Gly Arg Ile Val  
180 185 190  
Gly Gly Lys Val Cys Pro Lys Gly Glu Cys Pro Trp Gln Val Leu Leu  
195 200 205  
Leu Val Asn Gly Ala Gln Leu Cys Gly Gly Thr Leu Ile Asn Thr Ile  
210 215 220  
Trp Val Val Ser Ala Ala His Cys Phe Asp Lys Ile Lys Asn Trp Arg  
225 230 235 240  
Asn Leu Ile Ala Val Leu Gly Glu His Asp Leu Ser Glu His Asp Gly  
245 250 255  
Asp Glu Gln Ser Arg Arg Val Ala Gln Val Ile Ile Pro Ser Thr Tyr  
260 265 270  
Val Pro Gly Thr Thr Asn His Asp Ile Ala Leu Leu Arg Leu His Gln  
275 280 285



Pro Val Val Leu Thr Asp His Val Val Pro Leu Cys Leu Pro Glu Arg  
 290 295 300  
 Thr Phe Ser Glu Arg Thr Leu Ala Phe Val Arg Phe Ser Leu Val Ser  
 305 310 315 320  
 Gly Trp Gly Gln Leu Leu Asp Arg Gly Ala Thr Ala Leu Glu Leu Met  
 325 330 335  
 Val Leu Asn Val Pro Arg Leu Met Thr Gln Asp Cys Leu Gln Gln Ser  
 340 345 350  
 Arg Lys Val Gly Asp Ser Pro Asn Ile Thr Glu Tyr Met Phe Cys Ala  
 355 360 365  
 Gly Tyr Ser Asp Gly Ser Lys Asp Ser Cys Lys Gly Asp Ser Gly Gly  
 370 375 380  
 Pro His Ala Thr His Tyr Arg Gly Thr Trp Tyr Leu Thr Gly Ile Val  
 385 390 395 400  
 Ser Trp Gly Gln Gly Cys Ala Thr Val Gly His Phe Gly Val Tyr Thr  
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 <211> 1437  
 <212> DNA  
 <213> Homo sapiens

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 240  
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660

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780

tggattgtaa ctgctgcca ctgtgttgaa actggtgtta aaattacagt tgcgcagggt  
840

gaacataata ttgaggagac agaacataca gagcaaaagc gaaatgtgat tcgagcaatt  
900

attcctcacc acaactacaa tgcagctatt aataagtaca accatgacat tgcccttctg  
960

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1020

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1080

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catgaaggag gtagagattc atgtcaagga gatagtggg gaccccatgt tactgaagtg  
1260

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<210> 10  
<211> 462  
<212> PRT  
<213> Homo sapiens

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Ile Cys Leu Leu Gly Tyr Leu Leu Ser Ala Glu Cys Thr Val Phe Leu  
20 25 30

Asp His Glu Asn Ala Asn Lys Ile Leu Asn Arg Pro Lys Arg Tyr Asn

35	40	45
Ser Gly Lys Leu Glu Glu Phe Val Gln Gly Asn Leu Glu Arg Glu Cys 50 55 60		
Met Glu Glu Lys Cys Ser Phe Glu Glu Pro Arg Glu Val Phe Glu Asn 65 70 75 80		
Thr Glu Lys Thr Thr Glu Phe Trp Lys Gln Tyr Val Asp Gly Asp Gln 85 90 95		
Cys Glu Ser Asn Pro Cys Leu Asn Gly Gly Ser Cys Lys Asp Asp Ile 100 105 110		
Asn Ser Tyr Glu Cys Trp Cys Pro Phe Gly Phe Glu Gly Lys Asn Cys 115 120 125		
Glu Leu Asp Val Thr Cys Asn Ile Lys Asn Gly Arg Cys Glu Gln Phe 130 135 140		
Cys Lys Asn Ser Ala Asp Asn Lys Val Val Cys Ser Cys Thr Glu Gly 145 150 155 160		
Tyr Arg Leu Ala Glu Asn Gln Lys Ser Cys Glu Pro Ala Val Pro Phe 165 170 175		
Pro Cys Gly Arg Val Ser Val Ser Gln Thr Ser Lys Leu Thr Arg Ala 180 185 190		
Glu Ala Val Phe Pro Asp Val Asp Tyr Val Asn Pro Thr Glu Ala Glu 195 200 205		
Thr Ile Leu Asp Asn Ile Thr Gln Gly Thr Gln Ser Phe Asn Asp Phe 210 215 220		
Thr Arg Val Val Gly Gly Glu Asp Ala Lys Pro Gly Gln Phe Pro Trp 225 230 235 240		
Gln Val Val Leu Asn Gly Lys Val Asp Ala Phe Cys Gly Gly Ser Ile 245 250 255		
Val Asn Glu Lys Trp Ile Val Thr Ala Ala His Cys Val Glu Thr Gly 260 265 270		
Val Lys Ile Thr Val Val Ala Gly Glu His Asn Ile Glu Glu Thr Glu 275 280 285		
His Thr Glu Gln Lys Arg Asn Val Ile Arg Ala Ile Ile Pro His His 290 295 300		
Asn Tyr Asn Ala Ala Ile Asn Lys Tyr Asn His Asp Ile Ala Leu Leu 305 310 315 320		
Glu Leu Asp Glu Pro Leu Val Leu Asn Ser Tyr Val Thr Pro Ile Cys 325 330 335		
Ile Ala Asp Lys Glu Tyr Thr Asn Ile Phe Leu Lys Phe Gly Ser Gly 340 345 350		
Tyr Val Ser Gly Trp Ala Arg Val Phe His Lys Gly Arg Ser Ala Leu 355 360 365		

Val Leu Gln Tyr Leu Arg<sup>u</sup> Val Pro Leu Val Asp Arg Ala Thr Cys Leu  
 370 375 380

Arg Ser Thr Lys Phe Thr Ile Tyr Asn Asn Met Phe Cys Ala Gly Phe  
 385 390 395 400

His Glu Gly Gly Arg Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro His  
 405 410 415

Val Thr Glu Val Glu Gly Thr Ser Phe Leu Thr Gly Ile Ile Ser Trp  
 420 425 430

Gly Glu Glu Cys Ala Met Lys Gly Lys Tyr Gly Ile Tyr Thr Lys Val  
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Ser Arg Tyr Val Asn Trp Ile Lys Glu Lys Thr Lys Leu Thr  
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<210> 11  
 <211> 603  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
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caagtgtgt cttgatgact gctgattttc tggaatggaa aattaagttg tttagtgttt  
 420

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atc  
 603

<210> 12  
 <211> 116  
 <212> PRT

<213> Homo sapiens

<400> 12

Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser  
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Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro  
20 25 30

Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro  
35 40 45

Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro  
50 55 60

Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu  
65 70 75 80

Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly  
85 90 95

Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr  
100 105 110

Tyr His Lys Ser  
115

<210> 13

<211> 390

<212> DNA

<213> Homo sapiens

<400> 13

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tgtgagctga ccaacatcac cattgcaata gagaaagaag aatgtcggtt ctgcataagc  
120

atcaacacca ctggtgtgc tggctactgc tacaccaggg atctggtgta taaggaccca  
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gccaggccca aaatccagaa aacatgtacc ttcaaggaac tggatatatga aacagtgaga  
240

gtgcccggct gtgctcacca tgcagattcc ttgtatacat acccagtggc caccagtgt  
300

cactgtggca agtgtgacag cgacagcact gattgtactg tgcgaggcct ggggcccagc  
360

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<210> 14

<211> 129

<212> PRT

<213> Homo sapiens

<400> 14

Met Lys Thr Leu Gln Phe Phe Phe Leu Phe Cys Cys Trp Lys Ala Ile

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5

10

15

Cys Cys Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys  
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 Glu Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly  
 35 40 45  
 Tyr Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys  
 50 55 60  
 Ile Gln Lys Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg  
 65 70 75 80  
 Val Pro Gly Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val  
 85 90 95  
 Ala Thr Gln Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys  
 100 105 110  
 Thr Val Arg Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys  
 115 120 125

Glu

&lt;210&gt; 15

&lt;211&gt; 1342

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 15

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ccgccctctc ctccaggccc gtggggctgg cctgcaccg ccgagcttc cgggatgagg  
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gccccgggtg tggtcacccg gcgcgcccc ggtcgctgag ggaccccggc caggcgcgga  
 180

gatgggggtg caogaatgtc ctgcctggct gtggcttctc ctgtccctgc tgtcgctccc  
 240

tctgggcctc ccagtcctgg gcgccccacc acgcctcctc tgtgacagcc gagtccctga  
 300

gaggtacctc ttggaggcca aggaggccga gaatatcacg acgggctgtg ctgaacactg  
 360

cagcttgaat gagaatatca ctgtcccaga caccaaagtt aatttctatg cctggaagag  
 420

gatggaggtc gggcagcagg ccgtagaagt ctggcagggc ctggccctgc tgtcggaagc  
 480

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gcatgtggat aaagccgtca gtggccttcg cagcctcacc actctgcttc gggctctgcg  
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agcccagaag gaagccatct cccctccaga tggggcctca gctgctccac tccgaacaat  
660

cactgctgac actttccgca aactcttccg agtctactcc aatttccctcc ggggaaagct  
720

gaagctgtac acaggggagg cctgcaggac aggggacaga tgaccagggtg tgtccacctg  
780

ggcatatcca ccacctccct caccaacatt gcttgtgcca caccctcccc cgccactcct  
840

gaaccccgtc gaggggctct cagctcagcg ccagcctgtc ccatggacac tccagtgcc  
900

gcaatgacat ctcaggggcc agaggaactg tccagagagc aactctgaga tctaaggatg  
960

tcacagggcc aacttgaggg ccagagcag gaagcattca gagagcagct ttaaactcag  
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aggacacgct ttggaggcga tttacctgtt ttgcaccta ccatcagggg caggatgacc  
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ggtggcaaga gcccccttga caccggggtg gtgggaacca tgaagacagg atgggggctg  
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1342

<210> 16  
<211> 193  
<212> PRT  
<213> Homo sapiens

<400> 16  
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Leu Ser Leu Pro Leu Gly Leu Pro Val Leu Gly Ala Pro Pro Arg Leu  
20 25 30

Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu Leu Glu Ala Lys Glu  
35 40 45

Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His Cys Ser Leu Asn Glu  
50 55 60

Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe Tyr Ala Trp Lys Arg  
65 70 75 80

Met Glu Val Gly Gln Gln Ala Val Glu Val Trp Gln Gly Leu Ala Leu  
85 90 95

Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu Leu Val Asn Ser Ser  
100 105 110

Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp Lys Ala Val Ser Gly  
115 120 125

Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu Arg Ala Gln Lys Glu  
130 135 140

Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala Pro Leu Arg Thr Ile  
145 150 155 160

Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val Tyr Ser Asn Phe Leu  
165 170 175

Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala Cys Arg Thr Gly Asp  
180 185 190

Arg

<210> 17  
<211> 435  
<212> DNA  
<213> Homo sapiens

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cgctcgccca gcccagcac gcagccctgg gagcatgtga atgccatcca ggaggcccg  
120

cgctctcctga acctgagtag agacactgct gctgagatga atgaaacagt agaagtcac  
180

tcagaaatgt ttgacctcca ggagccgacc tgcttacaga cccgcttga gctgtacaag  
240

cagggcctgc ggggcagcct caccaagctc aagggcccct tgaccatgat ggccagccac  
300

tacaagcagc actgccctcc aaccccgga acttctgtg caaccagat tatcaccttt  
360

gaaagtttca aagagaacct gaaggacttt ctgcttgtca tcccctttga ctgctgggag  
420

ccagtccagg agtga  
435

<210> 18  
<211> 144  
<212> PRT  
<213> Homo sapiens

<400> 18  
Met Trp Leu Gln Ser Leu Leu Leu Leu Gly Thr Val Ala Cys Ser Ile



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Ser	Ala	Pro	Ala	Arg	Ser	Pro	Ser	Pro	Ser	Thr	Gln	Pro	Trp	Glu	His	
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Val	Asn	Ala	Ile	Gln	Glu	Ala	Arg	Arg	Leu	Leu	Asn	Leu	Ser	Arg	Asp	
		35					40					45				
Thr	Ala	Ala	Glu	Met	Asn	Glu	Thr	Val	Glu	Val	Ile	Ser	Glu	Met	Phe	
	50					55					60					
Asp	Leu	Gln	Glu	Pro	Thr	Cys	Leu	Gln	Thr	Arg	Leu	Glu	Leu	Tyr	Lys	
65					70					75					80	
Gln	Gly	Leu	Arg	Gly	Ser	Leu	Thr	Lys	Leu	Lys	Gly	Pro	Leu	Thr	Met	
				85					90					95		
Met	Ala	Ser	His	Tyr	Lys	Gln	His	Cys	Pro	Pro	Thr	Pro	Glu	Thr	Ser	
			100					105					110			
Cys	Ala	Thr	Gln	Ile	Ile	Thr	Phe	Glu	Ser	Phe	Lys	Glu	Asn	Leu	Lys	
		115					120					125				
Asp	Phe	Leu	Leu	Val	Ile	Pro	Phe	Asp	Cys	Trp	Glu	Pro	Val	Gln	Glu	
130						135					140					

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<210> 19
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<212> DNA
<213> Homo sapiens
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120

gggtcattcag atgtagcga taatggaact cttttcttag gcattttgaa gaattggaaa  
180

gaggagagtg acagaaaaat aatgcagagc caaattgtct ctttttactt caaacttttt  
240

aaaaacttta aagatgacca gagcatccaa aagagtgtgg agaccatcaa ggaagacatg  
300

aatgtcaagt ttttcaatag caacaaaaag aaacgagatg acttcgaaaa gctgactaat  
360

tattcggtaa ctgacttgaa tgtccaacgc aaagcaatac atgaactcat ccaagtgatg  
420

gctgaactgt cgccagcagc taaaacaggg aagcgaaaaa ggagtcagat gctgtttcga  
480

ggtcgaagag catcccagta a  
501

$\langle 210 \rangle$	20
$\langle 211 \rangle$	166

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 20

Met Lys Tyr Thr Ser Tyr Ile Leu Ala Phe Gln Leu Cys Ile Val Leu  
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Gly Ser Leu Gly Cys Tyr Cys Gln Asp Pro Tyr Val Lys Glu Ala Glu  
 20 25 30

Asn Leu Lys Lys Tyr Phe Asn Ala Gly His Ser Asp Val Ala Asp Asn  
 35 40 45

Gly Thr Leu Phe Leu Gly Ile Leu Lys Asn Trp Lys Glu Glu Ser Asp  
 50 55 60

Arg Lys Ile Met Gln Ser Gln Ile Val Ser Phe Tyr Phe Lys Leu Phe  
 65 70 75 80

Lys Asn Phe Lys Asp Asp Gln Ser Ile Gln Lys Ser Val Glu Thr Ile  
 85 90 95

Lys Glu Asp Met Asn Val Lys Phe Phe Asn Ser Asn Lys Lys Lys Arg  
 100 105 110

Asp Asp Phe Glu Lys Leu Thr Asn Tyr Ser Val Thr Asp Leu Asn Val  
 115 120 125

Gln Arg Lys Ala Ile His Glu Leu Ile Gln Val Met Ala Glu Leu Ser  
 130 135 140

Pro Ala Ala Lys Thr Gly Lys Arg Lys Arg Ser Gln Met Leu Phe Arg  
 145 150 155 160

Gly Arg Arg Ala Ser Gln  
 165

&lt;210&gt; 21

&lt;211&gt; 1352

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 21

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 120

gacagataca tcccaccatg atcaggatca cccaaccttc aacaagatca cccccaacct  
 180

ggctgagttc gccttcagcc tataccgcca gctggcacac cagccaaca gcaccaatat  
 240

cttctttctc ccagtgagca togtacagc ctttgcaatg ctctccctgg ggaccaaggc  
 300

tgacaactcac gatgaaatcc tggagggcct gaatttcaac ctcacggaga ttccggaggc  
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tcagatccat gaaggcttcc aggaactcct ccgtaccctc aaccagccag acagccagct  
420

ccagctgacc accggcaatg gcctgttcct cagcgagggc ctgaagctag tggataagtt  
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540

cgaagaggcc aagaaacaga tcaacgatta cgtggagaag ggtactcaag ggaaaattgt  
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ggatttggtc aaggagcttg acagagacac agtttttgcct ctggtgaatt acatcttctt  
660

taaaggcaaa tgggagagac cctttgaagt caaggacacc gaggaagagg acttccacgt  
720

ggaccaggtg accaccgtga aggtgcctat gatgaagcgt ttaggcatgt ttaacatcca  
780

gcactgtaag aagctgtcca gctgggtgct gctgatgaaa tacctgggca atgccaccgc  
840

catcttcttc ctgcctgatg aggggaaaact acagcactctg gaaaatgaac tcaccacga  
900

tatcatcacc aagttcctgg aaaatgaaga cagaaggtct gccagcttac atttaccxaa  
960

actgtocatt actggaacct atgatctgaa gagcgtcctg ggtcaactgg gcactactaa  
1020

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1080

caaggccgtg cataaggctg tgctgaccat cgacgagaaa gggactgaag ctgctggggc  
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1200

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<211> 418  
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 Lys Ile Thr Pro Asn Leu Ala Glu Phe Ala Phe Ser Leu Tyr Arg Gln  
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 His Asp Glu Ile Leu Glu Gly Leu Asn Phe Asn Leu Thr Glu Ile Pro  
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 Glu Ala Gln Ile His Glu Gly Phe Gln Glu Leu Leu Arg Thr Leu Asn  
 115 120 125  
 Gln Pro Asp Ser Gln Leu Gln Leu Thr Thr Gly Asn Gly Leu Phe Leu  
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 Ser Glu Gly Leu Lys Leu Val Asp Lys Phe Leu Glu Asp Val Lys Lys  
 145 150 155 160  
 Leu Tyr His Ser Glu Ala Phe Thr Val Asn Phe Gly Asp Thr Glu Glu  
 165 170 175  
 Ala Lys Lys Gln Ile Asn Asp Tyr Val Glu Lys Gly Thr Gln Gly Lys  
 180 185 190  
 Ile Val Asp Leu Val Lys Glu Leu Asp Arg Asp Thr Val Phe Ala Leu  
 195 200 205  
 Val Asn Tyr Ile Phe Phe Lys Gly Lys Trp Glu Arg Pro Phe Glu Val  
 210 215 220  
 Lys Asp Thr Glu Glu Glu Asp Phe His Val Asp Gln Val Thr Thr Val  
 225 230 235 240  
 Lys Val Pro Met Met Lys Arg Leu Gly Met Phe Asn Ile Gln His Cys  
 245 250 255  
 Lys Lys Leu Ser Ser Trp Val Leu Leu Met Lys Tyr Leu Gly Asn Ala  
 260 265 270  
 Thr Ala Ile Phe Phe Leu Pro Asp Glu Gly Lys Leu Gln His Leu Glu  
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 Asn Glu Leu Thr His Asp Ile Ile Thr Lys Phe Leu Glu Asn Glu Asp  
 290 295 300  
 Arg Arg Ser Ala Ser Leu His Leu Pro Lys Leu Ser Ile Thr Gly Thr  
 305 310 315 320  
 Tyr Asp Leu Lys Ser Val Leu Gly Gln Leu Gly Ile Thr Lys Val Phe  
 325 330 335  
 Ser Asn Gly Ala Asp Leu Ser Gly Val Thr Glu Glu Ala Pro Leu Lys  
 340 345 350

Leu Ser Lys Ala Val His Lys Ala Val Leu Thr Ile Asp Glu Lys Gly  
           355                                  360                                  365  
 Thr Glu Ala Ala Gly Ala Met Phe Leu Glu Ala Ile Pro Met Ser Ile  
           370                                  375                                  380  
 Pro Pro Glu Val Lys Phe Asn Lys Pro Phe Val Phe Leu Met Ile Glu  
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 Gln Asn Thr Lys Ser Pro Leu Phe Met Gly Lys Val Val Asn Pro Thr  
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Gln Lys

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 <211> 2004  
 <212> DNA  
 <213> Homo sapiens

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 cccgcccctg catccctaaa agcttcgggt acagctcggg ggtgtgtgtc tgcaatgcca  
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 420  
 cgggcacagg cctgctactg acctgcagc cagaacagaa gttccagaaa gtgaagggat  
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1080

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1200

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1260

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1320

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1380

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1860

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<211> 536  
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Ala Val Ser Trp Ala Ser Gly Ala Arg Pro Cys Ile Pro Lys Ser Phe  
35 40 45  
Gly Tyr Ser Ser Val Val Cys Val Cys Asn Ala Thr Tyr Cys Asp Ser  
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Phe Asp Pro Pro Thr Phe Pro Ala Leu Gly Thr Phe Ser Arg Tyr Glu  
65 70 75 80  
Ser Thr Arg Ser Gly Arg Arg Met Glu Leu Ser Met Gly Pro Ile Gln  
85 90 95  
Ala Asn His Thr Gly Thr Gly Leu Leu Leu Thr Leu Gln Pro Glu Gln  
100 105 110  
Lys Phe Gln Lys Val Lys Gly Phe Gly Gly Ala Met Thr Asp Ala Ala  
115 120 125  
Ala Leu Asn Ile Leu Ala Leu Ser Pro Pro Ala Gln Asn Leu Leu Leu  
130 135 140  
Lys Ser Tyr Phe Ser Glu Glu Gly Ile Gly Tyr Asn Ile Ile Arg Val  
145 150 155 160  
Pro Met Ala Ser Cys Asp Phe Ser Ile Arg Thr Tyr Thr Tyr Ala Asp  
165 170 175  
Thr Pro Asp Asp Phe Gln Leu His Asn Phe Ser Leu Pro Glu Glu Asp  
180 185 190  
Thr Lys Leu Lys Ile Pro Leu Ile His Arg Ala Leu Gln Leu Ala Gln  
195 200 205  
Arg Pro Val Ser Leu Leu Ala Ser Pro Trp Thr Ser Pro Thr Trp Leu  
210 215 220  
Lys Thr Asn Gly Ala Val Asn Gly Lys Gly Ser Leu Lys Gly Gln Pro  
225 230 235 240  
Gly Asp Ile Tyr His Gln Thr Trp Ala Arg Tyr Phe Val Lys Phe Leu  
245 250 255  
Asp Ala Tyr Ala Glu His Lys Leu Gln Phe Trp Ala Val Thr Ala Glu  
260 265 270  
Asn Glu Pro Ser Ala Gly Leu Leu Ser Gly Tyr Pro Phe Gln Cys Leu

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Gly	Phe	Thr	Pro	Glu	His	Gln	Arg	Asp	Phe	Ile	Ala	Arg	Asp	Leu	Gly
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Pro	Thr	Leu	Ala	Asn	Ser	Thr	His	His	Asn	Val	Arg	Leu	Leu	Met	Leu
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Leu	Asp	Phe	Leu	Ala	Pro	Ala	Lys	Ala	Thr	Leu	Gly	Glu	Thr	His	Arg
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Leu	Phe	Pro	Asn	Thr	Met	Leu	Phe	Ala	Ser	Glu	Ala	Cys	Val	Gly	Ser
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Lys	Phe	Trp	Glu	Gln	Ser	Val	Arg	Leu	Gly	Ser	Trp	Asp	Arg	Gly	Met
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Gln	Tyr	Ser	His	Ser	Ile	Ile	Thr	Asn	Leu	Leu	Tyr	His	Val	Val	Gly
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			420					425					430		
Val	Arg	Asn	Phe	Val	Asp	Ser	Pro	Ile	Ile	Val	Asp	Ile	Thr	Lys	Asp
			435				440					445			
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	450					455					460				
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Val	Val	Val	Leu	Asn	Arg	Ser	Ser	Lys	Asp	Val	Pro	Leu	Thr	Ile	Lys
			500					505					510		
Asp	Pro	Ala	Val	Gly	Phe	Leu	Glu	Thr	Ile	Ser	Pro	Gly	Tyr	Ser	Ile
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<212> DNA
<213> Homo sapiens
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gtgcctgtca aaagttgcag cgagccaagg tgtttcaacg ggggcacctg ccagcaggcc  
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aaccagatc gagactcaaa gccttggtgc tacgtcttta aggcggggaa gtacagctca  
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960

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1080

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<210> 26  
<211> 562  
<212> PRT  
<213> Homo sapiens

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Gly Ala Arg Ser Tyr Gln Val Ile Cys Arg Asp Glu Lys Thr Gln Met  
35 40 45

Ile Tyr Gln Gln His Gln Ser Trp Leu Arg Pro Val Leu Arg Ser Asn  
50 55 60

Arg Val Glu Tyr Cys Trp Cys Asn Ser Gly Arg Ala Gln Cys His Ser  
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Val Pro Val Lys Ser Cys Ser Glu Pro Arg Cys Phe Asn Gly Gly Thr  
85 90 95

Cys Gln Gln Ala Leu Tyr Phe Ser Asp Phe Val Cys Gln Cys Pro Glu  
100 105 110

Gly Phe Ala Gly Lys Cys Cys Glu Ile Asp Thr Arg Ala Thr Cys Tyr  
115 120 125

Glu Asp Gln Gly Ile Ser Tyr Arg Gly Thr Trp Ser Thr Ala Glu Ser  
130 135 140

Gly Ala Glu Cys Thr Asn Trp Asn Ser Ser Ala Leu Ala Gln Lys Pro  
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Tyr Ser Gly Arg Arg Pro Asp Ala Ile Arg Leu Gly Leu Gly Asn His  
165 170 175

Asn Tyr Cys Arg Asn Pro Asp Arg Asp Ser Lys Pro Trp Cys Tyr Val

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Gly	Thr	His	Ser	Leu	Thr	Glu	Ser	Gly	Ala	Ser	Cys	Leu	Pro	Trp	Asn		
225					230					235					240		
Ser	Met	Ile	Leu	Ile	Gly	Lys	Val	Tyr	Thr	Ala	Gln	Asn	Pro	Ser	Ala		
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Asp	Ala	Lys	Pro	Trp	Cys	His	Val	Leu	Lys	Asn	Arg	Arg	Leu	Thr	Trp		
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Glu	Tyr	Cys	Asp	Val	Pro	Ser	Cys	Ser	Thr	Cys	Gly	Leu	Arg	Gln	Tyr		
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Gly	Glu	Arg	Phe	Leu	Cys	Gly	Gly	Ile	Leu	Ile	Ser	Ser	Cys	Trp	Ile		
			340					345					350				
Leu	Ser	Ala	Ala	His	Cys	Phe	Gln	Glu	Arg	Phe	Pro	Pro	His	His	Leu		
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Thr	Val	Ile	Leu	Gly	Arg	Thr	Tyr	Arg	Val	Val	Pro	Gly	Glu	Glu	Glu		
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Gln	Lys	Phe	Glu	Val	Glu	Lys	Tyr	Ile	Val	His	Lys	Glu	Phe	Asp	Asp		
385					390					395					400		
Asp	Thr	Tyr	Asp	Asn	Asp	Ile	Ala	Leu	Leu	Gln	Leu	Lys	Ser	Asp	Ser		
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Ser	Arg	Cys	Ala	Gln	Glu	Ser	Ser	Val	Val	Arg	Thr	Val	Cys	Leu	Pro		
			420					425					430				
Pro	Ala	Asp	Leu	Gln	Leu	Pro	Asp	Trp	Thr	Glu	Cys	Glu	Leu	Ser	Gly		
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Tyr	Gly	Lys	His	Glu	Ala	Leu	Ser	Pro	Phe	Tyr	Ser	Glu	Arg	Leu	Lys		
	450					455					460						
Glu	Ala	His	Val	Arg	Leu	Tyr	Pro	Ser	Ser	Arg	Cys	Thr	Ser	Gln	His		
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Leu	Leu	Asn	Arg	Thr	Val	Thr	Asp	Asn	Met	Leu	Cys	Ala	Gly	Asp	Thr		
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Arg	Ser	Gly	Gly	Pro	Gln	Ala	Asn	Leu	His	Asp	Ala	Cys	Gln	Gly	Asp		
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Ser Gly Gly Pro Leu Val Cys Leu Asn Asp Gly Arg Met Thr Leu Val  
 515 520 525

Gly Ile Ile Ser Trp Gly Leu Gly Cys Gly Gln Lys Asp Val Pro Gly  
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Val Tyr Thr Lys Val Thr Asn Tyr Leu Asp Trp Ile Arg Asp Asn Met  
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Arg Pro

<210> 27  
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 <212> DNA  
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<210> 28

<211> 156  
 <212> PRT  
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<400> 28

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Asn Gly Ile Asn Asn Tyr Lys Asn Pro Lys Leu Thr Arg Met Leu Thr  
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Phe Lys Phe Tyr Met Pro Lys Lys Ala Thr Glu Leu Lys Gln Leu Gln  
 65 70 75 80

Cys Leu Glu Glu Glu Leu Lys Pro Leu Glu Glu Val Leu Asn Leu Ala  
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Gln Ser Lys Asn Phe His Leu Arg Pro Arg Asp Leu Ile Ser Asn Ile  
 100 105 110

Asn Val Ile Val Leu Glu Leu Lys Gly Ser Glu Thr Thr Phe Met Cys  
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Glu Tyr Ala Asp Glu Thr Ala Thr Ile Val Glu Phe Leu Asn Arg Trp  
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Ile Thr Phe Cys Gln Ser Ile Ile Ser Thr Leu Thr  
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<210> 29  
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ggtgagctgc ctgtggacgc aagatttcct cctagagtgc caaaatcttt tccattcaac  
 180

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960

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1080

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gatgacaact ctccctcctt tatccaaatt cgctcagttg ccaagaagca tcctaaaact  
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1380

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Trp Asp Tyr Met Gln Ser Asp Leu Gly Glu Leu Pro Val Asp Ala Arg  
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Phe Pro Pro Arg Val Pro Lys Ser Phe Pro Phe Asn Thr Ser Val Val  
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Tyr Lys Lys Thr Leu Phe Val Glu Phe Thr Asp His Leu Phe Asn Ile  
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Ala Lys Pro Arg Pro Pro Trp Met Gly Leu Leu Gly Pro Thr Ile Gln  
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Ala Glu Val Tyr Asp Thr Val Val Ile Thr Leu Lys Asn Met Ala Ser  
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Glu Gly Ala Glu Tyr Asp Asp Gln Thr Ser Gln Arg Glu Lys Glu Asp  
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Asp Lys Val Phe Pro Gly Gly Ser His Thr Tyr Val Trp Gln Val Leu  
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Gly Ala Leu Leu Val Cys Arg Glu Gly Ser Leu Ala Lys Glu Lys Thr

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Phe Leu Glu Gly His Thr Phe Leu Val Arg Asn His Arg Gln Ala Ser 290 295 300		
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Lys Asp Val His Ser Gly Leu Ile Gly Pro Leu Leu Val Cys His 1865 1870 1875
Thr Asn Thr Leu Asn Pro Ala His Gly Arg Gln Val Thr Val Gln 1880 1885 1890
Glu Phe Ala Leu Phe Phe Thr Ile Phe Asp Glu Thr Lys Ser Trp 1895 1900 1905
Tyr Phe Thr Glu Asn Met Glu Arg Asn Cys Arg Ala Pro Cys Asn 1910 1915 1920
Ile Gln Met Glu Asp Pro Thr Phe Lys Glu Asn Tyr Arg Phe His 1925 1930 1935
Ala Ile Asn Gly Tyr Ile Met Asp Thr Leu Pro Gly Leu Val Met 1940 1945 1950
Ala Gln Asp Gln Arg Ile Arg Trp Tyr Leu Leu Ser Met Gly Ser 1955 1960 1965
Asn Glu Asn Ile His Ser Ile His Phe Ser Gly His Val Phe Thr 1970 1975 1980
Val Arg Lys Lys Glu Glu Tyr Lys Met Ala Leu Tyr Asn Leu Tyr 1985 1990 1995
Pro Gly Val Phe Glu Thr Val Glu Met Leu Pro Ser Lys Ala Gly 2000 2005 2010
Ile Trp Arg Val Glu Cys Leu Ile Gly Glu His Leu His Ala Gly 2015 2020 2025
Met Ser Thr Leu Phe Leu Val Tyr Ser Asn Lys Cys Gln Thr Pro 2030 2035 2040
Leu Gly Met Ala Ser Gly His Ile Arg Asp Phe Gln Ile Thr Ala 2045 2050 2055
Ser Gly Gln Tyr Gly Gln Trp Ala Pro Lys Leu Ala Arg Leu His 2060 2065 2070
Tyr Ser Gly Ser Ile Asn Ala Trp Ser Thr Lys Glu Pro Phe Ser

2075	2080	2085
Trp Ile Lys Val Asp Leu Leu Ala Pro Met Ile Ile His Gly Ile 2090 2095 2100		
Lys Thr Gln Gly Ala Arg Gln Lys Phe Ser Ser Leu Tyr Ile Ser 2105 2110 2115		
Gln Phe Ile Ile Met Tyr Ser Leu Asp Gly Lys Lys Trp Gln Thr 2120 2125 2130		
Tyr Arg Gly Asn Ser Thr Gly Thr Leu Met Val Phe Phe Gly Asn 2135 2140 2145		
Val Asp Ser Ser Gly Ile Lys His Asn Ile Phe Asn Pro Pro Ile 2150 2155 2160		
Ile Ala Arg Tyr Ile Arg Leu His Pro Thr His Tyr Ser Ile Arg 2165 2170 2175		
Ser Thr Leu Arg Met Glu Leu Met Gly Cys Asp Leu Asn Ser Cys 2180 2185 2190		
Ser Met Pro Leu Gly Met Glu Ser Lys Ala Ile Ser Asp Ala Gln 2195 2200 2205		
Ile Thr Ala Ser Ser Tyr Phe Thr Asn Met Phe Ala Thr Trp Ser 2210 2215 2220		
Pro Ser Lys Ala Arg Leu His Leu Gln Gly Arg Ser Asn Ala Trp 2225 2230 2235		
Arg Pro Gln Val Asn Asn Pro Lys Glu Trp Leu Gln Val Asp Phe 2240 2245 2250		
Gln Lys Thr Met Lys Val Thr Gly Val Thr Thr Gln Gly Val Lys 2255 2260 2265		
Ser Leu Leu Thr Ser Met Tyr Val Lys Glu Phe Leu Ile Ser Ser 2270 2275 2280		
Ser Gln Asp Gly His Gln Trp Thr Leu Phe Phe Gln Asn Gly Lys 2285 2290 2295		
Val Lys Val Phe Gln Gly Asn Gln Asp Ser Phe Thr Pro Val Val 2300 2305 2310		
Asn Ser Leu Asp Pro Pro Leu Leu Thr Arg Tyr Leu Arg Ile His 2315 2320 2325		
Pro Gln Ser Trp Val His Gln Ile Ala Leu Arg Met Glu Val Leu 2330 2335 2340		
Gly Cys Glu Ala Gln Asp Leu Tyr 2345 2350		

<210> 31  
 <211> 1471  
 <212> DNA  
 <213> Homo sapiens

&lt;400&gt; 31

atggcgcccg tcgccgtctg ggcgcgctg gccgtcggac tggagctctg ggctgcggcg  
60

cacgccttgc cgcgccaggt ggcatttaca ccctacgcc cggagcccgg gagcacatgc  
120

cggctcagag aatactatga ccagacagct cagatgtgct gcagcaaag ctgcgcgggc  
180

caacatgcaa aagtcttctg taccaagacc tcggacaccg tgtgtgactc ctgtgaggac  
240

agcacataca ccagctctg gaactgggtt ccgagtgct tgagctgtgg ctcccgtctg  
300

agctctgacc aggtggaaac tcaagcctgc actcgggaac agaaccgcat ctgcacctgc  
360

aggcccggct ggtactgcg cctgagcaag caggaggggt gccggctgtg cgcgcgctg  
420

cgcaagtgc gcccggtt cggcgtggcc agaccaggaa ctgaaacatc agacgtggtg  
480

tgcaagccct gtgccccggg gacgttctcc aacacgactt catccacgga tatttgagg  
540

ccccaccaga tctgtaact ggtggccatc cctgggaatg caagcatgga tgcagtctgc  
600

acgtccactg cccccaccg gactatggcc ccaggggcag tacacttacc ccagccagtg  
660

tccacacgat cccaacacac gcagccaact ccagaacca gcactgctcc aagcacctcc  
720

ttcctgctcc caatgggccc cagcccccca gctgaaggga gcactggcga cttcgtctt  
780

ccagttggac tgattgtggg tgtgacagcc ttgggtctac taataatagg agtgggtgaac  
840

tgtgtcatca tgaccaggt gaaaaagaag cccttggtgc tgcagagaga agccaagggtg  
900

cctcacttgc ctgccgataa ggcccgggt acacagggcc ccgagcagca gcacctgctg  
960

atcacagcgc cgagctccag cagcagctcc ctggagagct cggccagtgc gttggacaga  
1020

aggcgcccca ctcggaacca gccacaggca ccaggcgtgg aggcagtggt ggccggggag  
1080

ggccgggcca gcaccgggag ctacagattct tcccctggtg gccatgggac ccaggtcaat  
1140

gtcacctgca tcgtgaact ctgtagcagc tctgaccaca gctcacagt ctctcccaa  
1200

gccagctcca caatgggaga cacagattcc agcccctcgg agtccccgaa ggacgagcay  
1260

gtcccccttct ccaaggagga atgtgccttt cggtcacagc tggagacgcc agagaccctg  
1320

ctggggagca ccgaagagaa gcccctgccc cttaggagtgc ctgatgctgg gatgaagccc  
1380

agttaaccag gccggtgtgg gctgtgtcgt agccaagggtg ggctgagccc tggcaggatg  
1440

accctgcgaa ggggccctgg tccttcagg c  
1471

<210> 32  
<211> 461  
<212> PRT  
<213> Homo sapiens

<400> 32  
Met Ala Pro Val Ala Val Trp Ala Ala Leu Ala Val Gly Leu Glu Leu  
1 5 10 15  
Trp Ala Ala Ala His Ala Leu Pro Ala Gln Val Ala Phe Thr Pro Tyr  
20 25 30  
Ala Pro Glu Pro Gly Ser Thr Cys Arg Leu Arg Glu Tyr Tyr Asp Gln  
35 40 45  
Thr Ala Gln Met Cys Cys Ser Lys Cys Ser Pro Gly Gln His Ala Lys  
50 55 60  
Val Phe Cys Thr Lys Thr Ser Asp Thr Val Cys Asp Ser Cys Glu Asp  
65 70 75 80  
Ser Thr Tyr Thr Gln Leu Trp Asn Trp Val Pro Glu Cys Leu Ser Cys  
85 90 95  
Gly Ser Arg Cys Ser Ser Asp Gln Val Glu Thr Gln Ala Cys Thr Arg  
100 105 110  
Glu Gln Asn Arg Ile Cys Thr Cys Arg Pro Gly Trp Tyr Cys Ala Leu  
115 120 125  
Ser Lys Gln Glu Gly Cys Arg Leu Cys Ala Pro Leu Arg Lys Cys Arg  
130 135 140  
Pro Gly Phe Gly Val Ala Arg Pro Gly Thr Glu Thr Ser Asp Val Val  
145 150 155 160  
Cys Lys Pro Cys Ala Pro Gly Thr Phe Ser Asn Thr Thr Ser Ser Thr  
165 170 175  
Asp Ile Cys Arg Pro His Gln Ile Cys Asn Val Val Ala Ile Pro Gly  
180 185 190  
Asn Ala Ser Met Asp Ala Val Cys Thr Ser Thr Ser Pro Thr Arg Ser  
195 200 205  
Met Ala Pro Gly Ala Val His Leu Pro Gln Pro Val Ser Thr Arg Ser

210	215	220
Gln His Thr Gln Pro Thr Pro Glu Pro Ser Thr Ala Pro Ser Thr Ser :		
225	230	235 240
Phe Leu Leu Pro Met Gly Pro Ser Pro Pro Ala Glu Gly Ser Thr Gly		
	245	250 255
Asp Phe Ala Leu Pro Val Gly Leu Ile Val Gly Val Thr Ala Leu Gly		
	260	265 270
Leu Leu Ile Ile Gly Val Val Asn Cys Val Ile Met Thr Gln Val Lys		
	275	280 285
Lys Lys Pro Leu Cys Leu Gln Arg Glu Ala Lys Val Pro His Leu Pro		
	290	295 300
Ala Asp Lys Ala Arg Gly Thr Gln Gly Pro Glu Gln Gln His Leu Leu		
	305	310 315 320
Ile Thr Ala Pro Ser Ser Ser Ser Ser Ser Leu Glu Ser Ser Ala Ser		
	325	330 335
Ala Leu Asp Arg Arg Ala Pro Thr Arg Asn Gln Pro Gln Ala Pro Gly		
	340	345 350
Val Glu Ala Ser Gly Ala Gly Glu Ala Arg Ala Ser Thr Gly Ser Ser		
	355	360 365
Asp Ser Ser Pro Gly Gly His Gly Thr Gln Val Asn Val Thr Cys Ile		
	370	375 380
Val Asn Val Cys Ser Ser Ser Asp His Ser Ser Gln Cys Ser Ser Gln		
	385	390 395 400
Ala Ser Ser Thr Met Gly Asp Thr Asp Ser Ser Pro Ser Glu Ser Pro		
	405	410 415
Lys Asp Glu Gln Val Pro Phe Ser Lys Glu Glu Cys Ala Phe Arg Ser		
	420	425 430
Gln Leu Glu Thr Pro Glu Thr Leu Leu Gly Ser Thr Glu Glu Lys Pro		
	435	440 445
Leu Pro Leu Gly Val Pro Asp Ala Gly Met Lys Pro Ser		
	450	455 460

&lt;210&gt; 33

&lt;211&gt; 1475

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 33

tccacctgtc cccgcagcgc cggctcgcgc cctcctgcgc cagccaccga gccgccgtct  
60

agcgccccga cctcgccacc atgagagccc tgotggcgcg cctgcttctc tgcgtcctgg  
120

tctgtagcga ctccaaaggc agcaatgaac ttcatcaagt tccatogaac tgtgactgtc  
180

taaatggagg aacatgtgtg tccaacaagt acttctccaa cattcactgg tgcaactgcc  
240

caaagaaatt cggagggcag cactgtgaaa tagataagtc aaaaacctgc tatgagggga  
300

atggtcactt ttaccgagga aaggccagca ctgacaccat gggcgggcc tgccctgccct  
360

ggaactctgc cactgtcctt cagcaaact accatgccca cagatctgat gctcttcagc  
420

tgggcctggg gaaacataat tactgcagga acccagacaa ccggagggcga cccctgggtgt  
480

atgtgcagggt gggcctaaag ccgcttgtcc aagagtgcac ggtgcatgac tgcgcagatg  
540

gaaaaaagcc ctctctctct ccagaagaat taaaatttca gtgtggccaa aagactctga  
600

ggccccgctt taagattatt gggggagaat tcaccaccat cgagaaccag cccctggtttg  
660

cggccatcta caggaggcac cgggggggct ctgtcaccta cgtgtgtgga ggcagcctca  
720

tcagcccttg ctgggtgatc agcgccacac actgcttcat tgattacca aagaaggagg  
780

actacatcgt ctacctgggt cgotcaaggc ttaactccaa cacgcaaggg gagatgaagt  
840

ttgaggtgga aaacctcatc ctacacaagg actacagcgc tgacacgctt gctcaccaca  
900

acgacattgc cttgctgaag atccgttcca aggagggcag gtgtgcgag ccatcccga  
960

ctatacagac catctgcctg cctcgcgatg ataacgatcc ccagtttggc acaagctgtg  
1020

agatcactgg ctttggaata gagaattcta ccgactatct ctatccggag cagctgaaga  
1080

tgactgttgt gaagctgatt tcccaccggg agtgtcagca gcccactac tacggctctg  
1140

aagtcaccac caaatgctg tgtgtctgtg acccacagt gaaaacagat tcctgccagg  
1200

gagactcagg gggacccctc gtctgttccc tccaaggccg catgactttg actggaattg  
1260

tgagctgggg ccgtggatgt gccctgaagg acaagccagg cgtctacacg agagtctcac  
1320

acttcttacc ctggatccgc agtcacacca aggaagagaa tggcctggcc ctctgaggggt  
1380

ccccagggag gaaacgggca ccaccgctt tcttgctggt tgtcattttt gcagtagagt  
1440

catctccatc agctgtaaga agagactggg aagat  
1475

<210> 34  
<211> 431  
<212> PRT  
<213> Homo sapiens

<400> 34  
Met Arg Ala Leu Leu Ala Arg Leu Leu Leu Cys Val Leu Val Val Ser  
1 5 10 15  
Asp Ser Lys Gly Ser Asn Glu Leu His Gln Val Pro Ser Asn Cys Asp  
20 25 30  
Cys Leu Asn Gly Gly Thr Cys Val Ser Asn Lys Tyr Phe Ser Asn Ile  
35 40 45  
His Trp Cys Asn Cys Pro Lys Lys Phe Gly Gly Gln His Cys Glu Ile  
50 55 60  
Asp Lys Ser Lys Thr Cys Tyr Glu Gly Asn Gly His Phe Tyr Arg Gly  
65 70 75 80  
Lys Ala Ser Thr Asp Thr Met Gly Arg Pro Cys Leu Pro Trp Asn Ser  
85 90 95  
Ala Thr Val Leu Gln Gln Thr Tyr His Ala His Arg Ser Asp Ala Leu  
100 105 110  
Gln Leu Gly Leu Gly Lys His Asn Tyr Cys Arg Asn Pro Asp Asn Arg  
115 120 125  
Arg Arg Pro Trp Cys Tyr Val Gln Val Gly Leu Lys Pro Leu Val Gln  
130 135 140  
Glu Cys Met Val His Asp Cys Ala Asp Gly Lys Lys Pro Ser Ser Pro  
145 150 155 160  
Pro Glu Glu Leu Lys Phe Gln Cys Gly Gln Lys Thr Leu Arg Pro Arg  
165 170 175  
Phe Lys Ile Ile Gly Gly Glu Phe Thr Thr Ile Glu Asn Gln Pro Trp  
180 185 190  
Phe Ala Ala Ile Tyr Arg Arg His Arg Gly Gly Ser Val Thr Tyr Val  
195 200 205  
Cys Gly Gly Ser Leu Ile Ser Pro Cys Trp Val Ile Ser Ala Thr His  
210 215 220  
Cys Phe Ile Asp Tyr Pro Lys Lys Glu Asp Tyr Ile Val Tyr Leu Gly  
225 230 235 240  
Arg Ser Arg Leu Asn Ser Asn Thr Gln Gly Glu Met Lys Phe Glu Val  
245 250 255  
Glu Asn Leu Ile Leu His Lys Asp Tyr Ser Ala Asp Thr Leu Ala His



260 265 270  
 His Asn Asp Ile Ala Leu Leu Lys Ile Arg Ser Lys Glu Gly Arg Cys  
 275 280 285  
 Ala Gln Pro Ser Arg Thr Ile Gln Thr Ile Cys Leu Pro Ser Met Tyr  
 290 295 300  
 Asn Asp Pro Gln Phe Gly Thr Ser Cys Glu Ile Thr Gly Phe Gly Lys  
 305 310 315 320  
 Glu Asn Ser Thr Asp Tyr Leu Tyr Pro Glu Gln Leu Lys Met Thr Val  
 325 330 335  
 Val Lys Leu Ile Ser His Arg Glu Cys Gln Gln Pro His Tyr Tyr Gly  
 340 345 350  
 Ser Glu Val Thr Thr Lys Met Leu Cys Ala Ala Asp Pro Gln Trp Lys  
 355 360 365  
 Thr Asp Ser Cys Gln Gly Asp Ser Gly Gly Pro Leu Val Cys Ser Leu  
 370 375 380  
 Gln Gly Arg Met Thr Leu Thr Gly Ile Val Ser Trp Gly Arg Gly Cys  
 385 390 395 400  
 Ala Leu Lys Asp Lys Pro Gly Val Tyr Thr Arg Val Ser His Phe Leu  
 405 410 415  
 Pro Trp Ile Arg Ser His Thr Lys Glu Glu Asn Gly Leu Ala Leu  
 420 425 430  
  
 <210> 35  
 <211> 107  
 <212> PRT  
 <213> Mus musculus  
  
 <400> 35  
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly  
 1 5 10 15  
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Val Asn Thr Ala  
 20 25 30  
 Val Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45  
 Tyr Ser Ala Ser Phe Leu Tyr Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60  
 Ser Arg Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80  
 Glu Asp Phe Ala Thr Tyr Tyr Cys Gln Gln His Tyr Thr Thr Pro Pro  
 85 90 95  
 Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys  
 100 105

<210> 36  
 <211> 120

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 36

Glu Val Gln Leu Val Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly  
 1 5 10 15

Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Asn Ile Lys Asp Thr  
 20 25 30

Tyr Ile His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val  
 35 40 45

Ala Arg Ile Tyr Pro Thr Asn Gly Tyr Thr Arg Tyr Ala Asp Ser Val  
 50 55 60

Lys Gly Arg Phe Thr Ile Ser Ala Asp Thr Ser Lys Asn Thr Ala Tyr  
 65 70 75 80

Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys  
 85 90 95

Ser Arg Trp Gly Gly Asp Gly Phe Tyr Ala Met Asp Tyr Trp Gly Gln  
 100 105 110

Gly Thr Leu Val Thr Val Ser Ser  
 115 120

&lt;210&gt; 37

&lt;211&gt; 120

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 37

Gln Val Thr Leu Arg Glu Ser Gly Pro Ala Leu Val Lys Pro Thr Gln  
 1 5 10 15

Thr Leu Thr Leu Thr Cys Thr Phe Ser Gly Phe Ser Leu Ser Thr Ser  
 20 25 30

Gly Met Ser Val Gly Trp Ile Arg Gln Pro Ser Gly Lys Ala Leu Glu  
 35 40 45

Trp Leu Ala Asp Ile Trp Trp Asp Asp Lys Lys Asp Tyr Asn Pro Ser  
 50 55 60

Leu Lys Ser Arg Leu Thr Ile Ser Lys Asp Thr Ser Lys Asn Gln Val  
 65 70 75 80

Val Leu Lys Val Thr Asn Met Asp Pro Ala Asp Thr Ala Thr Tyr Tyr  
 85 90 95

Cys Ala Arg Ser Met Ile Thr Asn Trp Tyr Phe Asp Val Trp Gly Ala  
 100 105 110

Gly Thr Thr Val Thr Val Ser Ser  
 115 120

&lt;210&gt; 38

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 38

Asp Ile Gln Met Thr Gln Ser Pro Ser Thr Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Thr Cys Lys Cys Gln Leu Ser Val Gly Tyr Met  
 20 25 30

His Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Trp Ile Tyr  
 35 40 45

Asp Thr Ser Lys Leu Ala Ser Gly Val Pro Ser Arg Phe Ser Gly Ser  
 50 55 60

Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro Asp  
 65 70 75 80

Asp Phe Ala Thr Tyr Tyr Cys Phe Gln Gly Ser Gly Tyr Pro Phe Thr  
 85 90 95

Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105

&lt;210&gt; 39

&lt;211&gt; 1039

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 39

tcctgcacag gcagtgcctt gaagtgcctc ttcagagacc tttcttcata gactactttt  
 60

ttttctttaa gcagcaaaag gagaaaattg tcatcaaagg atattccaga ttcttgacag  
 120

cattctcgtc atctctgagg<sup>\*</sup>acatcacat catotcagga tgaggggcat gaagctgctg  
 180

ggggcgctgc tggcactggc ggccctactg cagggggcog tgtccctgaa gatcgcagcc  
 240

ttcaacatcc agacatttgg ggagaccaag atgtccaatg ccaccctcgt cagctacatt  
 300

gtgcagatcc tgagccgcta tgacatcgcc ctggtccagg aggtcagaga cagccacctg  
 360

actgccgtgg ggaagctgct ggacaacctc aatcaggatg caccagacac ctatcactac  
 420

gtggtcagtg agccactggg acggaacagc tataaggagc gctacctgtt cgtgtacagg  
 480

cctgaccagg tgtctgoggt ggacagctac tactacgatg atggctgcga gccctgcggg  
 540

aacgacacct tcaaccgaga gccagccatt gtcaggttct tctcccgtt cacagaggto  
 600

agggagtgtg ccattgttcc cctgcatgcg gccccggggg acgcagtagc cgagatcgac  
660

gctctctatg acgtctacct ggatgtccaa gagaaatggg gcttggagga cgtcatgttg  
720

atgggcgact tcaatgcggg ctgcagctat gtgagaccct cccagtgggc atccatccgc  
780

ctgtggacaa gccccacctt ccagtggctg atccccgaca gcgctgacac cacagctaca  
840

cccacgcact gtgcctatga caggatcgtg gttgcaggga tgctgctccg aggcgccgtt  
900

gttcccgact cggctcttcc ctttaacttc caggctgcct atggcctgag tgaccaactg  
960

gcccagcca tcagtgacca ctatccagtg gaggtgatgc tgaagtgagc agccccctccc  
1020

cacaccagtt gaactgcag  
1039

<210> 40  
<211> 282  
<212> PRT  
<213> Homo sapiens

<400> 40

Met Arg Gly Met Lys Leu Leu Gly Ala Leu Leu Ala Leu Ala Ala Leu  
1 5 10 15

Leu Gln Gly Ala Val Ser Leu Lys Ile Ala Ala Phe Asn Ile Gln Thr  
20 25 30

Phe Gly Glu Thr Lys Met Ser Asn Ala Thr Leu Val Ser Tyr Ile Val  
35 40 45

Gln Ile Leu Ser Arg Tyr Asp Ile Ala Leu Val Gln Glu Val Arg Asp  
50 55 60

Ser His Leu Thr Ala Val Gly Lys Leu Leu Asp Asn Leu Asn Gln Asp  
65 70 75 80

Ala Pro Asp Thr Tyr His Tyr Val Val Ser Glu Pro Leu Gly Arg Asn  
85 90 95

Ser Tyr Lys Glu Arg Tyr Leu Phe Val Tyr Arg Pro Asp Gln Val Ser  
100 105 110

Ala Val Asp Ser Tyr Tyr Tyr Asp Asp Gly Cys Glu Pro Cys Gly Asn  
115 120 125

Asp Thr Phe Asn Arg Glu Pro Ala Ile Val Arg Phe Phe Ser Arg Phe  
130 135 140

Thr Glu Val Arg Glu Phe Ala Ile Val Pro Leu His Ala Ala Pro Gly  
145 150 155 160

Asp Ala Val Ala Glu Ile Asp Ala Leu Tyr Asp Val Tyr Leu Asp Val

165

170

175

Gln Glu Lys Trp Gly Leu Glu Asp Val Met Leu Met Gly Asp Phe Asn  
 180 185 190

Ala Gly Cys Ser Tyr Val Arg Pro Ser Gln Trp Ser Ser Ile Arg Leu  
 195 200 205

Trp Thr Ser Pro Thr Phe Gln Trp Leu Ile Pro Asp Ser Ala Asp Thr  
 210 215 220

Thr Ala Thr Pro Thr His Cys Ala Tyr Asp Arg Ile Val Val Ala Gly  
 225 230 235 240

Met Leu Leu Arg Gly Ala Val Val Pro Asp Ser Ala Leu Pro Phe Asn  
 245 250 255

Phe Gln Ala Ala Tyr Gly Leu Ser Asp Gln Leu Ala Gln Ala Ile Ser  
 260 265 270

Asp His Tyr Pro Val Glu Val Met Leu Lys  
 275 280

<210> 41  
 <211> 678  
 <212> DNA  
 <213> Mus musculus

<400> 41  
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ttctcctgca gggccagtca gtctgttggc tcaagcatcc actgggtatca gcaaagaaca  
 120

aatgggttctc caaggcttct cataaagtat gcttctgagt ctatgtctgg gatcccttcc  
 180

aggtttagtg gcagtggtac agggacagat ttactotta gcatcaaac tgtggagtct  
 240

gaagatattg cagattatta ctgtcaacaa agtcatagct ggccattcac gtctggctcg  
 300

gggacaaatt tggaagtaaa agaagtgaag cttgaggagt ctggaggagg cttggtgcaa  
 360

cctggaggat ccatgaaact ctctgtgtt gcctctggat tcattttcag taaccactgg  
 420

atgaactggg tccgccagtc tccagagaag gggcttgagt gggttgctga aattagatca  
 480

aaatctatta attctgcaac acattatgcg gagtctgtga aaggagggtt caccatctca  
 540

agagatgatt ccaaaagtgc tgtctacctg caaatgaccg acttaagaac tgaagacact  
 600

ggcgtttatt actgttccag gaattactac ggtagtacct acgactactg gggccaaggg  
 660

accactctca cagtctcc  
678

<210> 42  
<211> 226  
<212> PRT  
<213> Mus musculus

<400> 42  
Asp Ile Leu Leu Thr Gln Ser Pro Ala Ile Leu Ser Val Ser Pro Gly  
1 5 10 15  
Glu Arg Val Ser Phe Ser Cys Arg Ala Ser Gln Phe Val Gly Ser Ser  
20 25 30  
Ile His Trp Tyr Gln Gln Arg Thr Asn Gly Ser Pro Arg Leu Leu Ile  
35 40 45  
Lys Tyr Ala Ser Glu Ser Met Ser Gly Ile Pro Ser Arg Phe Ser Gly  
50 55 60  
Ser Gly Ser Gly Thr Asp Phe Thr Leu Ser Ile Asn Thr Val Glu Ser  
65 70 75 80  
Glu Asp Ile Ala Asp Tyr Tyr Cys Gln Gln Ser His Ser Trp Pro Phe  
85 90 95  
Thr Phe Gly Ser Gly Thr Asn Leu Glu Val Lys Glu Val Lys Leu Glu  
100 105 110  
Glu Ser Gly Gly Gly Leu Val Gln Pro Gly Gly Ser Met Lys Leu Ser  
115 120 125  
Cys Val Ala Ser Gly Phe Ile Phe Ser Asn His Trp Met Asn Trp Val  
130 135 140  
Arg Gln Ser Pro Glu Lys Gly Leu Glu Trp Val Ala Glu Ile Arg Ser  
145 150 155 160  
Lys Ser Ile Asn Ser Ala Thr His Tyr Ala Glu Ser Val Lys Gly Arg  
165 170 175  
Phe Thr Ile Ser Arg Asp Asp Ser Lys Ser Ala Val Tyr Leu Gln Met  
180 185 190  
Thr Asp Leu Arg Thr Glu Asp Thr Gly Val Tyr Tyr Cys Ser Arg Asn  
195 200 205  
Tyr Tyr Gly Ser Thr Tyr Asp Tyr Trp Gly Gln Gly Thr Thr Leu Thr  
210 215 220

Val Ser  
225

<210> 43  
<211> 450  
<212> DNA  
<213> Homo sapiens

<400> 43

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60

gcctcctgcc cctgtctggcg ctgtctggccc tctggggacc tgaccacagcc gcagcctttg  
120

tgaaccaaca cctgtgcggc tcacacctgg tggaagctct ctacctagtg tgcggggaac  
180

gaggtcttctt ctacacaccc aagaccogcc gggaggcaga ggacctgcag gtggggcagg  
240

tggagctggg cggggggccct ggtgcaggca gcctgcagcc cttggccctg gaggggtccc  
300

tgcagaagcg tggcattgtg gaacaatgct gtaccagcat ctgtccctc taccagctgg  
360

agaactactg caactagacg cagcccgagc gcagcccccc acccgccgcc tcttgcaccg  
420

agagagatgg aataaagccc ttgaaccagc  
450

<210> 44  
<211> 110  
<212> PRT  
<213> Homo sapiens

<400> 44  
Met Ala Leu Trp Met Arg Leu Leu Pro Leu Leu Ala Leu Leu Ala Leu  
1 5 10 15  
Trp Gly Pro Asp Pro Ala Ala Ala Phe Val Asn Gln His Leu Cys Gly  
20 25 30  
Ser His Leu Val Glu Ala Leu Tyr Leu Val Cys Gly Glu Arg Gly Phe  
35 40 45  
Phe Tyr Thr Pro Lys Thr Arg Arg Glu Ala Glu Asp Leu Gln Val Gly  
50 55 60  
Gln Val Glu Leu Gly Gly Gly Pro Gly Ala Gly Ser Leu Gln Pro Leu  
65 70 75 80  
Ala Leu Glu Gly Ser Leu Gln Lys Arg Gly Ile Val Glu Gln Cys Cys  
85 90 95  
Thr Ser Ile Cys Ser Leu Tyr Gln Leu Glu Asn Tyr Cys Asn  
100 105 110

<210> 45  
<211> 1203  
<212> DNA  
<213> Hepatitis B virus

<400> 45  
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cctctgggat tctttccoga tcaccagttg gaccctgcgt tcggagccaa ctcaaacaa  
120

ccagattggg acttcaaccc caacaaggat cactggccag aggcaatcaa ggtaggagcg  
180

ggagacttcg ggccagggtt caccacacca cagggcgtc tttggggtg gagccctcag  
240

gctcagggca tattgacaac agtgccagca gcgcctctc ctgtttccac caatcggcag  
300

tcaggaagac agcctactcc catctctcca cctctaagag acagtcaccc tcaggccatg  
360

cagtggaaact ccacaacatt ccaccaagct ctgctagatc ccagagttag gggcctatat  
420

tttctgctg gtggctccag ttccggaaca gtaaaccctg ttccgactac tgtctcacc  
480

atatogtcaa tcttctcgag gactggggac cctgcaccga acatggagag cacaacatca  
540

ggattcctag gaccctgct cgtgttacag gcggggttt tcttggtgac aagaatctc  
600

acaataccac agagtctaga ctcggtgttg acttctctca attttctagg gggagcacc  
660

acgtgtcctg gccaaaattc gcagtcccca acctccaatc actcaccaac ctcttgctc  
720

ccaatttgc ctggttatcg ctggatgtgt ctgoggcgtt ttatcatatt cctcttcac  
780

ctgctgctat gctcatctt cttgttggtt cttctggact accaaggat gtgcccgtt  
840

tgtcctctac ttccaggaac atcaactacc agcacgggac catgcaagac ctgcacgatt  
900

cctgctcaag gaacctctat gtttcctct tgttgctgta caaaccttc ggacggaaac  
960

tgcacttgta ttcccatccc atcatcctgg gctttcgcaa gattcctatg ggagtgggcc  
1020

tcagtccgtt tctcctggct cagtttacta gtgccatttg ttcagtgggt cgcagggtt  
1080

tccccactg tttggctttc agttatatgg atgatgtggt attgggggcc aagtctgtac  
1140

aacatcttga gtccctttt acctctatta ccaattttct tttgtctttg ggtatacatt  
1200

tga  
1203

<210> 46



<211> 400  
 <212> PRT  
 <213> Hepatitis B virus

<400> 46

Met Gly Gly Trp Ser Ser Lys Pro Arg Gln Gly Met Gly Thr Asn Leu  
 1 5 10 15

Ser Val Pro Asn Pro Leu Gly Phe Phe Pro Asp His Gln Leu Asp Pro  
 20 25 30

Ala Phe Gly Ala Asn Ser Asn Asn Pro Asp Trp Asp Phe Asn Pro Asn  
 35 40 45

Lys Asp His Trp Pro Glu Ala Ile Lys Val Gly Ala Gly Asp Phe Gly  
 50 55 60

Pro Gly Phe Thr Pro Pro His Gly Gly Leu Leu Gly Trp Ser Pro Gln  
 65 70 75 80

Ala Gln Gly Ile Leu Thr Thr Val Pro Ala Ala Pro Pro Pro Val Ser  
 85 90 95

Thr Asn Arg Gln Ser Gly Arg Gln Pro Thr Pro Ile Ser Pro Pro Leu  
 100 105 110

Arg Asp Ser His Pro Gln Ala Met Gln Trp Asn Ser Thr Thr Phe His  
 115 120 125

Gln Ala Leu Leu Asp Pro Arg Val Arg Gly Leu Tyr Phe Pro Ala Gly  
 130 135 140

Gly Ser Ser Ser Gly Thr Val Asn Pro Val Pro Thr Thr Val Ser Pro  
 145 150 155 160

Ile Ser Ser Ile Phe Ser Arg Thr Gly Asp Pro Ala Pro Asn Met Glu  
 165 170 175

Ser Thr Thr Ser Gly Phe Leu Gly Pro Leu Leu Val Leu Gln Ala Gly  
 180 185 190

Phe Phe Leu Leu Thr Arg Ile Leu Thr Ile Pro Gln Ser Leu Asp Ser  
 195 200 205

Trp Trp Thr Ser Leu Asn Phe Leu Gly Gly Ala Pro Thr Cys Pro Gly  
 210 215 220

Gln Asn Ser Gln Ser Pro Thr Ser Asn His Ser Pro Thr Ser Cys Pro  
 225 230 235 240

Pro Ile Cys Pro Gly Tyr Arg Trp Met Cys Leu Arg Arg Phe Ile Ile  
 245 250 255

Phe Leu Phe Ile Leu Leu Leu Cys Leu Ile Phe Leu Leu Val Leu Leu  
 260 265 270

Asp Tyr Gln Gly Met Leu Pro Val Cys Pro Leu Leu Pro Gly Thr Ser  
 275 280 285

Thr Thr Ser Thr Gly Pro Cys Lys Thr Cys Thr Ile Pro Ala Gln Gly  
 290 295 300

Thr Ser Met Phe Pro Ser Cys Cys Cys Thr Lys Pro Ser Asp Gly Asn  
305 310 315 320

Cys Thr Cys Ile Pro Ile Pro Ser Ser Trp Ala Phe Ala Arg Phe Leu  
325 330 335

Trp Glu Trp Ala Ser Val Arg Phe Ser Trp Leu Ser Leu Leu Val Pro  
340 345 350

Phe Val Gln Trp Phe Ala Gly Leu Ser Pro Thr Val Trp Leu Ser Val  
355 360 365

Ile Trp Met Met Trp Tyr Trp Gly Pro Ser Leu Tyr Asn Ile Leu Ser  
370 375 380

Pro Phe Leu Pro Leu Leu Pro Ile Phe Phe Cys Leu Trp Val Tyr Ile  
385 390 395 400

<210> 47

<211> 799

<212> DNA

<213> Homo sapiens

<400> 47

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gtccctgctc ctggcttttg gctgctctg cctgccctgg cttcaagagg gcagtgcctt  
120

cccaaccatt cccttatcca ggccttttga caacgctatg ctccggcgccc atcgtctgca  
180

ccagctggcc tttgacacct accaggagtt tgaagaagcc tatatcccaa aggaacagaa  
240

gtattcattc ctgcagaacc cccagacctc cctctgtttc tcagagtcta ttccgacacc  
300

ctccaacagg gaggaaacac aacagaaatc caacctagag ctgctccgca tctccctgct  
360

gctcatccag tctgtggctgg agcccgtgca gttcctcagg agtgtcttcg ccaacagcct  
420

ggtgtacggc gcctctgaca gcaacgtcta tgacctccta aaggacctag aggaaggcat  
480

ccaaacgctg atggggaggc tggaagatgg cagcccccg actgggcaga tcttcaagca  
540

gacctacagc aagttcgaca caaactcaca caacgatgac gcactactca agaactacgg  
600

gctgctctac tgcttcagga aggacatgga caaggtcgag acattcctgc gcctogtgca  
660

gtgccgctct gtggagggca gctgtggctt ctagctgcc gggtggcatc cctgtgaccc  
720

ctccccagtg cctctcctgg ccttggaagt tgccactcca gtgcccacca gccctgtcct  
780

aataaaatta agttgcac  
799

<210> 48  
<211> 217  
<212> PRT  
<213> Homo sapiens

<400> 48  
Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu  
1 5 10 15  
Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Phe Pro Thr Ile Pro Leu  
20 25 30  
Ser Arg Pro Phe Asp Asn Ala Met Leu Arg Ala His Arg Leu His Gln  
35 40 45  
Leu Ala Phe Asp Thr Tyr Gln Glu Phe Glu Glu Ala Tyr Ile Pro Lys  
50 55 60  
Glu Gln Lys Tyr Ser Phe Leu Gln Asn Pro Gln Thr Ser Leu Cys Phe  
65 70 75 80  
Ser Glu Ser Ile Pro Thr Pro Ser Asn Arg Glu Glu Thr Gln Gln Lys  
85 90 95  
Ser Asn Leu Glu Leu Leu Arg Ile Ser Leu Leu Leu Ile Gln Ser Trp  
100 105 110  
Leu Glu Pro Val Gln Phe Leu Arg Ser Val Phe Ala Asn Ser Leu Val  
115 120 125  
Tyr Gly Ala Ser Asp Ser Asn Val Tyr Asp Leu Leu Lys Asp Leu Glu  
130 135 140  
Glu Gly Ile Gln Thr Leu Met Gly Arg Leu Glu Asp Gly Ser Pro Arg  
145 150 155 160  
Thr Gly Gln Ile Phe Lys Gln Thr Tyr Ser Lys Phe Asp Thr Asn Ser  
165 170 175  
His Asn Asp Asp Ala Leu Leu Lys Asn Tyr Gly Leu Leu Tyr Cys Phe  
180 185 190  
Arg Lys Asp Met Asp Lys Val Glu Thr Phe Leu Arg Ile Val Gln Cys  
195 200 205  
Arg Ser Val Glu Gly Ser Cys Gly Phe  
210 215

<210> 49  
<211> 963  
<212> DNA  
<213> Homo sapiens

<400> 49

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120

gtcccggccg agtgcttoga cctgctggtc cgccactgcg tggcctgcgg gctcctgcgg  
180

acgccgcggc cgaaaccggc cggggccagc agccctgcgc ccaggacggc gctgcagccg  
240

caggagtggg tgggcgcggg ggccggcgag ggcggggtcg acaaaactca cacatgccca  
300

ccgtgccag cacctgaact cctgggggga ccgtcagtct tcctcttccc cccaaaaccc  
360

aaggacaccc tcatgatctc ccggaccctt gaggtcacat gcgtgggtgt ggacgtgagc  
420

caogaagacc ctgaggtcaa gttcaactgg tacgtggacg gcgtggaggt gcataatgcc  
480

aagacaaagc cgcgggagga gcagtacaac agcacgtacc gtgtgggtcag cgtcctcacc  
540

gtcctgcacc aggactggct gaatggcaag gagtacaagt gcaagggtct caacaaagcc  
600

ctcccagccc ccctcgagaa aaccatctcc aaagccaaag ggcagccccg agaaccacag  
660

gtgtacaccc tgcccccatc ccgggatgag ctgaccaaga accaggtcag cctgacctgc  
720

ctgggtcaaag gctttctatcc cagcgacatc gccgtggagt gggagagcaa tgggcagccg  
780

gagaacaact acaagaccac gcctcccgtg ttggactccg acggctcctt ctctctctac  
840

agcaagctca ccgtggacaa gacaggtgg cagcagggga acgtcttctc atgctccgtg  
900

atgcatgagg ctctgcacaa ccactacag cagaagagcc tctccctgtc tcccgggaaa  
960

tga  
963

<210> 50  
<211> 320  
<212> PRT  
<213> Homo sapiens

<400> 50  
Met Glu Thr Asp Thr Leu Leu Leu Trp Val Leu Leu Leu Trp Val Pro  
1 5 10 15

Gly Ser Thr Gly Asp Val Arg Arg Gly Pro Arg Ser Leu Arg Gly Arg

20	25	30
Asp Ala Pro Ala Pro Thr Pro Cys Val Pro Ala Glu Cys Phe Asp Leu		
35	40	45
Leu Val Arg His Cys Val Ala Cys Gly Leu Leu Arg Thr Pro Arg Pro		
50	55	60
Lys Pro Ala Gly Ala Ser Ser Pro Ala Pro Arg Thr Ala Leu Gln Pro		
65	70	75
Gln Glu Ser Val Gly Ala Gly Ala Gly Glu Ala Ala Val Asp Lys Thr		
85	90	95
His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro Ser		
100	105	110
Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg		
115	120	125
Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro		
130	135	140
Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala		
145	150	155
Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val		
165	170	175
Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr		
180	185	190
Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys Thr		
195	200	205
Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu		
210	215	220
Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys		
225	230	235
Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser		
245	250	255
Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp		
260	265	270
Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser		
275	280	285
Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala		
290	295	300
Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys		
305	310	315
		320

<210> 51  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 51

Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro  
 65 70 75 80

Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys  
 100 105

&lt;210&gt; 52

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Mus musculus

&lt;400&gt; 52

Asp Ile Gln Met Thr Gln Thr Thr Ser Ser Leu Ser Ala Ser Leu Gly  
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Asp Gly Ile Val Lys Leu Leu Ile  
 35 40 45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
 50 55 60

Ser Gly Ser Gly Thr Asp Tyr Ser Leu Thr Ile Ser Asn Leu Glu Gln  
 65 70 75 80

Glu Asp Ile Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
 85 90 95

Thr Phe Gly Gly Gly Thr Lys Leu Glu Ile Lys  
 100 105

&lt;210&gt; 53

&lt;211&gt; 119

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 53

Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
 1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
 20 25 30

Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
 50 55 60

Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr  
 65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly  
 100 105 110

Thr Leu Val Thr Val Ser Ser  
 115

<210> 54  
 <211> 119  
 <212> PRT  
 <213> Mus musculus

<400> 54  
 Gln Val Gln Leu Gln Gln Ser Gly Ala Glu Leu Val Gly Pro Gly Thr  
 1 5 10 15

Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
 20 25 30

Leu Ile Glu Trp Val Lys Gln Arg Pro Gly Gln Gly Leu Glu Trp Ile  
 35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
 50 55 60

Lys Gly Lys Ala Thr Leu Thr Val Asp Lys Ser Ser Thr Thr Ala Tyr  
 65 70 75 80

Met Gln Leu Ser Ser Leu Thr Ser Asp Asp Ser Ala Val Tyr Phe Cys  
 85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Arg Gly  
 100 105 110

Thr Leu Val Thr Val Ser Ala  
 115

<210> 55  
 <211> 214  
 <212> PRT  
 <213> Homo sapiens

<400> 55  
 Asp Ile Gln Met Thr Gln Thr Pro Ser Thr Leu Ser Ala Ser Val Gly  
 1 5 10 15

Asp Arg Val Thr Ile Ser Cys Arg Ala Ser Gln Asp Ile Asn Asn Tyr  
 20 25 30

Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Leu Leu Ile

35

40

45

Tyr Tyr Thr Ser Thr Leu His Ser Gly Val Pro Ser Arg Phe Ser Gly  
50 55 60

Ser Gly Ser Gly Thr Asp Tyr Thr Leu Thr Ile Ser Ser Leu Gln Pro  
65 70 75 80

Asp Asp Phe Ala Thr Tyr Phe Cys Gln Gln Gly Asn Thr Leu Pro Trp  
85 90 95

Thr Phe Gly Gln Gly Thr Lys Val Glu Val Lys Arg Thr Val Ala Ala  
100 105 110

Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly  
115 120 125

Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala  
130 135 140

Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln  
145 150 155 160

Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser  
165 170 175

Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Val Tyr  
180 185 190

Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser  
195 200 205

Phe Asn Arg Gly Glu Cys  
210

<210> 56  
<211> 448  
<212> PRT  
<213> Homo sapiens

<400> 56  
Gln Val Gln Leu Val Gln Ser Gly Ala Glu Val Lys Lys Pro Gly Ser  
1 5 10 15

Ser Val Lys Val Ser Cys Lys Ala Ser Gly Tyr Ala Phe Thr Asn Tyr  
20 25 30

Leu Ile Glu Trp Val Arg Gln Ala Pro Gly Gln Gly Leu Glu Trp Ile  
35 40 45

Gly Val Ile Tyr Pro Gly Ser Gly Gly Thr Asn Tyr Asn Glu Lys Phe  
50 55 60

Lys Gly Arg Val Thr Leu Thr Val Asp Glu Ser Thr Asn Thr Ala Tyr  
65 70 75 80

Met Glu Leu Ser Ser Leu Arg Ser Glu Asp Thr Ala Val Tyr Phe Cys  
85 90 95

Ala Arg Arg Asp Gly Asn Tyr Gly Trp Phe Ala Tyr Trp Gly Gln Gly  
100 105 110



Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe  
 115 120 125  
 Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser Gly Gly Thr Ala Ala Leu  
 130 135 140  
 Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp  
 145 150 155 160  
 Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu  
 165 170 175  
 Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser  
 180 185 190  
 Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys Asn Val Asn His Lys Pro  
 195 200 205  
 Ser Asn Thr Lys Val Asp Lys Lys Val Glu Pro Lys Ser Cys Asp Lys  
 210 215 220  
 Thr His Thr Cys Pro Pro Cys Pro Ala Pro Glu Leu Leu Gly Gly Pro  
 225 230 235 240  
 Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser  
 245 250 255  
 Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp  
 260 265 270  
 Pro Glu Val Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn  
 275 280 285  
 Ala Lys Thr Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val  
 290 295 300  
 Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu  
 305 310 315 320  
 Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro Ile Glu Lys  
 325 330 335  
 Thr Ile Ser Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr  
 340 345 350  
 Leu Pro Pro Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr  
 355 360 365  
 Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu  
 370 375 380  
 Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu  
 385 390 395 400  
 Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys  
 405 410 415  
 Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu  
 420 425 430

Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly  
 435 440 445

<210> 57  
 <211> 8540  
 <212> DNA  
 <213> Homo sapiens

<400> 57  
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 120  
 ggagaatggg cggaactggg cggagttagg ggcgggatgg gcggagttag gggcgggact  
 180  
 atggttgctg actaattgag atgcatgctt tgcatacttc tgcttctgg ggagcctggg  
 240  
 gactttccac acctgggttc tgactaattg agatgcatgc tttgcatact tctgcttctg  
 300  
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 360  
 agttattaat agtaatcaat tacgggggtca ttagttcata gcccatatat ggagttccgc  
 420  
 gttacataac ttacggtaaa tggcccgctt ggctgaccgc ccaacgaccc ccgcccattg  
 480  
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 660  
 atgaccttat gggactttcc tacttggcag tacatctacg tattagtcac cgctattacc  
 720  
 atggtgatgc ggttttggca gtacatcaat ggcggtggat agcggtttga ctcacgggga  
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 960  
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1080

tctgtcttca tcttcccgcc atctgatgag cagttgaaat ctggaactgc ctctgtttgt  
1140

tgcctgctga ataacttcta tcccagagag gccaaagtac agtggaaggt ggataacgcc  
1200

ctccaatcgg gtaactccca ggagagtgtc acagagcagg acagcaagga cagcacctac  
1260

agcctcagca gcaccctgac gctgagcaaa gcagactacg agaaacacaa agtctacgcc  
1320

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1380

tgttgaattc agatccgtta acggttacca actacctaga ctggattcgt gacaacatgc  
1440

ggccgtgata tctacgtatg atcagcctcg actgtgcctt ctagttgcca gccatctgtt  
1500

gtttgcccct ccccgctgcs ttccttgacc ctggaaggtg ccaactccac tgtcctttcc  
1560

taataaaatg aggaaattgc atcgatttgt ctgagtaggt gtcattctat tctgggggggt  
1620

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1680

gcggtgggct ctatggaacc agctggggct cgacagctat gccaaagtac cccctattg  
1740

acgtcaatga cggtaaattg cccgcctggc attatgcca gtacatgacc ttatgggact  
1800

ttcctacttg gcagtagatc tacgtattag tcatcgctat taccatgggtg atgcgggttt  
1860

ggcagtacat caatgggctg ggatagcggg ttgactcacg gggatttcca agtctccacc  
1920

ccattgacgt caatgggagt ttgttttggc accaaaatca acgggacttt ccaaaatgct  
1980

gtaacaactc cgccccattg acgcaaatgg gcggtaggcg tgtacgggtg gaggtctata  
2040

taagcagagc tgggtacgtc ctcacattca gtgatcagca ctgaacacag acccgtcgac  
2100

atgggttggg gcctcatctt gctcttctt gtcgctgttg ctacgogtgt cgctagcacc  
2160

aagggcccat cgggtcttccc cctggcacc cctccaaga gcacctctgg gggcacagcg  
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gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacgggtgtc gtggaaccua  
2280

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tccctcagca gcgtgggtgac cgtgccctcc agcagcttgg gcacccagac ctacatctgc  
2400

aacgtgaatc acaagcccag caacaccaag gtggacaaga aagcagagcc caaatcttgt  
2460

gacaaaactc acacatgccc accgtgcccga gaacctgaac tcctgggggg accgtcagtc  
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2580

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2640

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Leu Ser Ala Ser Pro Gly Glu Lys Val Thr Met Thr Cys Arg Ala Ser  
35 40 45

Ser Ser Val Ser Tyr Ile His Trp Phe Gln Gln Lys Pro Gly Ser Ser  
50 55 60

Pro Lys Pro Trp Ile Tyr Ala Thr Ser Asn Leu Ala Ser Gly Val Pro  
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Val Arg Phe Ser Gly Ser Gly Ser Gly Thr Ser Tyr Ser Leu Thr Ile  
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Pro Gly Ala Ser Val Lys Met Ser Cys Lys Ala Ser Gly Tyr Thr Phe  
 35 40 45

Thr Ser Tyr Asn Met His Trp Val Lys Gln Thr Pro Gly Arg Gly Leu  
 50 55 60

Glu Trp Ile Gly Ala Ile Tyr Pro Gly Asn Gly Asp Thr Ser Tyr Asn  
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Gln Lys Phe Lys Gly Lys Ala Thr Leu Thr Ala Asp Lys Ser Ser Ser  
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Thr Ala Tyr Met Gln Leu Ser Ser Leu Thr Ser Glu Asp Ser Ala Val  
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His Gly Ser Pro Val Asp Ile Cys Thr Ala Lys Pro Arg Asp Ile Pro  
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Met Asn Pro Met Cys Ile Tyr Arg Ser Pro Glu Lys Lys Ala Thr Glu  
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Asp Glu Gly Ser Glu Gln Lys Ile Pro Glu Ala Thr Asn Arg Arg Val  
65 70 75 80

Trp Glu Leu Ser Lys Ala Asn Ser Arg Phe Ala Thr Thr Phe Tyr Gln  
85 90 95

His Leu Ala Asp Ser Lys Asn Asp Asn Asp Asn Ile Phe Leu Ser Pro  
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Leu Ser Ile Ser Thr Ala Phe Ala Met Thr Lys Leu Gly Ala Cys Asn  
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Asp Thr Leu Gln Gln Leu Met Glu Val Phe Lys Phe Asp Thr Ile Ser  
130 135 140

Glu Lys Thr Ser Asp Gln Ile His Phe Phe Phe Ala Lys Leu Asn Cys  
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Arg Leu Phe Gly Asp Lys Ser Leu Thr Phe Asn Glu Thr Tyr Gln Asp  
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Lys Thr Glu Gly Arg Ile Thr Asp Val Ile Pro Ser Glu Ala Ile Asn
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Glu Leu Thr Val Leu Val Leu Val Asn Thr Ile Tyr Phe Lys Gly Leu
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Trp Lys Ser Lys Phe Ser Pro Glu Asn Thr Arg Lys Glu Leu Phe Tyr
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Lys Ala Asp Gly Glu Ser Cys Ser Ala Ser Met Met Tyr Gln Glu Gly
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Lys Phe Arg Tyr Arg Arg Val Ala Glu Gly Thr Gln Val Leu Glu Leu
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Pro Phe Lys Gly Asp Asp Ile Thr Met Val Leu Ile Leu Pro Lys Pro
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Glu Lys Ser Leu Ala Lys Val Glu Lys Glu Leu Thr Pro Glu Val Leu
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Gln Glu Trp Leu Asp Glu Leu Glu Glu Met Met Leu Val Val His Met
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Pro Arg Phe Arg Ile Glu Asp Gly Phe Ser Leu Lys Glu Gln Leu Gln
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Asp Met Gly Leu Val Asp Leu Phe Ser Pro Glu Lys Ser Lys Leu Pro
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Gly Ile Val Ala Glu Gly Arg Asp Asp Leu Tyr Val Ser Asp Ala Phe
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His Lys Ala Phe Leu Glu Val Asn Glu Glu Gly Ser Glu Ala Ala Ala
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Ser Thr Ala Val Val Ile Ala Gly Arg Ser Leu Asn Pro Asn Arg Val
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Thr Phe Lys Ala Asn Arg Pro Phe Leu Val Phe Ile Arg Glu Val Pro
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<211> 1962
<212> DNA
<213> Homo sapiens

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1962

<210> 66  
<211> 653  
<212> PRT  
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<400> 66  
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Gln Val Asp Ala Ala Arg Ala Leu Trp Pro Leu Arg Arg Phe Trp Arg  
35 40 45

Ser Thr Gly Phe Cys Pro Pro Leu Pro His Ser Gln Ala Asp Gln Tyr  
50 55 60

Val Leu Ser Trp Asp Gln Gln Leu Asn Leu Ala Tyr Val Gly Ala Val  
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Pro His Arg Gly Ile Lys Gln Val Arg Thr His Trp Leu Leu Glu Leu  
85 90 95

Val Thr Thr Arg Gly Ser Thr Gly Arg Gly Leu Ser Tyr Asn Phe Thr

	100	105	110
His Leu Asp Gly Tyr Leu Asp Leu Leu Arg Glu Asn Gln Leu Leu Pro	115	120	125
Gly Phe Glu Leu Met Gly Ser Ala Ser Gly His Phe Thr Asp Phe Glu	130	135	140
Asp Lys Gln Gln Val Phe Glu Trp Lys Asp Leu Val Ser Ser Leu Ala	145	150	155
Arg Arg Tyr Ile Gly Arg Tyr Gly Leu Ala His Val Ser Lys Trp Asn	165	170	175
Phe Glu Thr Trp Asn Glu Pro Asp His His Asp Phe Asp Asn Val Ser	180	185	190
Met Thr Met Gln Gly Phe Leu Asn Tyr Tyr Asp Ala Cys Ser Glu Gly	195	200	205
Leu Arg Ala Ala Ser Pro Ala Leu Arg Leu Gly Gly Pro Gly Asp Ser	210	215	220
Phe His Thr Pro Pro Arg Ser Pro Leu Ser Trp Gly Leu Leu Arg His	225	230	235
Cys His Asp Gly Thr Asn Phe Phe Thr Gly Glu Ala Gly Val Arg Leu	245	250	255
Asp Tyr Ile Ser Leu His Arg Lys Gly Ala Arg Ser Ser Ile Ser Ile	260	265	270
Leu Glu Gln Glu Lys Val Val Ala Gln Gln Ile Arg Gln Leu Phe Pro	275	280	285
Lys Phe Ala Asp Thr Pro Ile Tyr Asn Asp Glu Ala Asp Pro Leu Val	290	295	300
Gly Trp Ser Leu Pro Gln Pro Trp Arg Ala Asp Val Thr Tyr Ala Ala	305	310	315
Met Val Val Lys Val Ile Ala Gln His Gln Asn Leu Leu Leu Ala Asn	325	330	335
Thr Thr Ser Ala Phe Pro Tyr Ala Leu Leu Ser Asn Asp Asn Ala Phe	340	345	350
Leu Ser Tyr His Pro His Pro Phe Ala Gln Arg Thr Leu Thr Ala Arg	355	360	365
Phe Gln Val Asn Asn Thr Arg Pro Pro His Val Gln Leu Leu Arg Lys	370	375	380
Pro Val Leu Thr Ala Met Gly Leu Leu Ala Leu Leu Asp Glu Glu Gln	385	390	395
Leu Trp Ala Glu Val Ser Gln Ala Gly Thr Val Leu Asp Ser Asn His	405	410	415
Thr Val Gly Val Leu Ala Ser Ala His Arg Pro Gln Gly Pro Ala Asp	420	425	430



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His Pro Asn Arg Ser Val Ala Val Thr Leu Arg Leu Arg Gly Val Pro  
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Pro Gly Pro Gly Leu Val Tyr Val Thr Arg Tyr Leu Asp Asn Gly Leu  
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Cys Ser Pro Asp Gly Glu Trp Arg Arg Leu Gly Arg Pro Val Phe Pro  
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Thr Ala Glu Gln Phe Arg Arg Met Arg Ala Ala Glu Asp Pro Val Ala  
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Ala Ala Pro Arg Pro Leu Pro Ala Gly Gly Arg Leu Thr Leu Arg Pro  
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Ala Leu Arg Leu Pro Ser Leu Leu Leu Val His Val Cys Ala Arg Pro  
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Glu Lys Pro Pro Gly Gln Val Thr Arg Leu Arg Ala Leu Pro Leu Thr  
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Gln Gly Gln Leu Val Leu Val Trp Ser Asp Glu His Val Gly Ser Lys  
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Cys Leu Trp Thr Tyr Glu Ile Gln Phe Ser Gln Asp Gly Lys Ala Tyr  
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Pro Asp Thr Gly Ala Val Ser Gly Ser Tyr Arg Val Arg Ala Leu Asp  
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Tyr Trp Ala Arg Pro Gly Pro Phe Ser Asp Pro Val Pro Tyr Leu Glu  
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&lt;210&gt; 67

&lt;211&gt; 1290

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 67

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<210> 68

<211> 429

<212> PRT

<213> Homo sapiens

<400> 68

Met Gln Leu Arg Asn Pro Glu Leu His Leu Gly Cys Ala Leu Ala Leu

1 5 10 15  
 Arg Phe Leu Ala Leu Val Ser Trp Asp Ile Pro Gly Ala Arg Ala Leu  
 20 25 30  
 Asp Asn Gly Leu Ala Arg Thr Pro Thr Met Gly Trp Leu His Trp Glu  
 35 40 45  
 Arg Phe Met Cys Asn Leu Asp Cys Gln Glu Glu Pro Asp Ser Cys Ile  
 50 55 60  
 Ser Glu Lys Leu Phe Met Glu Met Ala Glu Leu Met Val Ser Glu Gly  
 65 70 75 80  
 Trp Lys Asp Ala Gly Tyr Glu Tyr Leu Cys Ile Asp Asp Cys Trp Met  
 85 90 95  
 Ala Pro Gln Arg Asp Ser Glu Gly Arg Leu Gln Ala Asp Pro Gln Arg  
 100 105 110  
 Phe Pro His Gly Ile Arg Gln Leu Ala Asn Tyr Val His Ser Lys Gly  
 115 120 125  
 Leu Lys Leu Gly Ile Tyr Ala Asp Val Gly Asn Lys Thr Cys Ala Gly  
 130 135 140  
 Phe Pro Gly Ser Phe Gly Tyr Tyr Asp Ile Asp Ala Gln Thr Phe Ala  
 145 150 155 160  
 Asp Trp Gly Val Asp Leu Leu Lys Phe Asp Gly Cys Tyr Cys Asp Ser  
 165 170 175  
 Leu Glu Asn Leu Ala Asp Gly Tyr Lys His Met Ser Leu Ala Leu Asn  
 180 185 190  
 Arg Thr Gly Arg Ser Ile Val Tyr Ser Cys Glu Trp Pro Leu Tyr Met  
 195 200 205  
 Trp Pro Phe Gln Lys Pro Asn Tyr Thr Glu Ile Arg Gln Tyr Cys Asn  
 210 215 220  
 His Trp Arg Asn Phe Ala Asp Ile Asp Asp Ser Trp Lys Ser Ile Lys  
 225 230 235 240  
 Ser Ile Leu Asp Trp Thr Ser Phe Asn Gln Glu Arg Ile Val Asp Val  
 245 250 255  
 Ala Gly Pro Gly Gly Trp Asn Asp Pro Asp Met Leu Val Ile Gly Asn  
 260 265 270  
 Phe Gly Leu Ser Trp Asn Gln Gln Val Thr Gln Met Ala Leu Trp Ala  
 275 280 285  
 Ile Met Ala Ala Pro Leu Phe Met Ser Asn Asp Leu Arg His Ile Ser  
 290 295 300  
 Pro Gln Ala Lys Ala Leu Leu Gln Asp Lys Asp Val Ile Ala Ile Asn  
 305 310 315 320  
 Gln Asp Pro Leu Gly Lys Gln Gly Tyr Gln Leu Arg Gln Gly Asp Asn  
 325 330 335

Phe Glu Val Trp Glu Arg Pro Leu Ser Gly Leu Ala Trp Ala Val Ala  
 340 345 350  
 Met Ile Asn Arg Gln Glu Ile Gly Gly Pro Arg Ser Tyr Thr Ile Ala  
 355 360 365  
 Val Ala Ser Leu Gly Lys Gly Val Ala Cys Asn Pro Ala Cys Phe Ile  
 370 375 380  
 Thr Gln Leu Leu Pro Val Lys Arg Lys Leu Gly Phe Tyr Glu Trp Thr  
 385 390 395 400  
 Ser Arg Leu Arg Ser His Ile Asn Pro Thr Gly Thr Val Leu Leu Gln  
 405 410 415  
 Leu Glu Asn Thr Met Gln Met Ser Leu Lys Asp Leu Leu  
 420 425

<210> 69  
 <211> 351  
 <212> DNA  
 <213> Homo sapiens

<400> 69  
 atggattact acagaaaata tgcagctatc tttctgggtca cattgtcggg gtttctgcat  
 60  
 gttctccatt ccgctcctga tgtgcaggat tgcccagaat gcacgctaca ggaaaaccca  
 120  
 ttcttctccc agccgggtgc cccaatactt cagtgcattg gctgctgctt ctctagagca  
 180  
 tatcccactc cactaaggtc caagaagacg atgttgggtcc aaaagaacgt cacctcagag  
 240  
 tccacttgct gtgtagctaa atcatataac agggtcacag taatggggggg tttcaaagtg  
 300  
 gagaaccaca cggcgtgccca ctgcagtact tgttattatc acaaattctta a  
 351

<210> 70  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<400> 70  
 Met Asp Tyr Tyr Arg Lys Tyr Ala Ala Ile Phe Leu Val Thr Leu Ser  
 1 5 10 15  
 Val Phe Leu His Val Leu His Ser Ala Pro Asp Val Gln Asp Cys Pro  
 20 25 30  
 Glu Cys Thr Leu Gln Glu Asn Pro Phe Phe Ser Gln Pro Gly Ala Pro  
 35 40 45  
 Ile Leu Gln Cys Met Gly Cys Cys Phe Ser Arg Ala Tyr Pro Thr Pro  
 50 55 60

Leu Arg Ser Lys Lys Thr Met Leu Val Gln Lys Asn Val Thr Ser Glu  
65 70 75 80

Ser Thr Cys Cys Val Ala Lys Ser Tyr Asn Arg Val Thr Val Met Gly  
85 90 95

Gly Phe Lys Val Glu Asn His Thr Ala Cys His Cys Ser Thr Cys Tyr  
100 105 110

Tyr His Lys Ser  
115

<210> 71  
<211> 498  
<212> DNA  
<213> Homo sapiens

<400> 71  
atggagatgt tccaggggct gctgctgttg ctgctgctga gcatgggagg gacatgggca  
60

tccaaggagc cgcttcggcc acggtgccgc cccatcaatg ccacctggc tgtggagaag  
120

gagggctgcc ccgtgtgcat caccgtcaac accaccatct gtgcgggcta ctgccccacc  
180

atgaccgcg tgctgcagg ggtcctgccg gccctgcctc aggtgggtgtg caactaccgc  
240

gatgtgcgt tgcagtcac ccggctccct ggctgcccgc gcggcgtgaa ccccggtgtc  
300

tcctacgccg tggtctcag ctgtcaatgt gcaactctgcc gccgcagcac cactgactgc  
360

gggggtccca aggaccaccc cttagacctgt gatgaccccc gcttccagga ctctcttcc  
420

tcaaaggccc ctccccccag ccttccaagc ccatcccgac tcccggggcc ctcgacacc  
480

ccgatactcc cacaataa  
498

<210> 72  
<211> 165  
<212> PRT  
<213> Homo sapiens

<400> 72  
Met Glu Met Phe Gln Gly Leu Leu Leu Leu Leu Leu Ser Met Gly  
1 5 10 15

Gly Thr Trp Ala Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile  
20 25 30

Asn Ala Thr Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr  
35 40 45

Val Asn Thr Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val

50

55

60

Leu Gln Gly Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg  
65 70 75 80

Asp Val Arg Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val  
85 90 95

Asn Pro Val Val Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu  
100 105 110

Cys Arg Arg Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu  
115 120 125

Thr Cys Asp Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro  
130 135 140

Pro Pro Ser Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr  
145 150 155 160

Pro Ile Leu Pro Gln  
165

<210> 73

<211> 165

<212> PRT

<213> Homo sapiens

<400> 73

Ala Pro Pro Arg Leu Ile Cys Asp Ser Arg Val Leu Glu Arg Tyr Leu  
1 5 10 15

Leu Glu Ala Lys Glu Ala Glu Asn Ile Thr Thr Gly Cys Ala Glu His  
20 25 30

Cys Ser Leu Asn Glu Asn Ile Thr Val Pro Asp Thr Lys Val Asn Phe  
35 40 45

Tyr Ala Trp Lys Arg Met Glu Val Gly Gln Gln Ala Val Glu Val Trp  
50 55 60

Gln Gly Leu Ala Leu Leu Ser Glu Ala Val Leu Arg Gly Gln Ala Leu  
65 70 75 80

Leu Val Asn Ser Ser Gln Pro Trp Glu Pro Leu Gln Leu His Val Asp  
85 90 95

Lys Ala Val Ser Gly Leu Arg Ser Leu Thr Thr Leu Leu Arg Ala Leu  
100 105 110

Gly Ala Gln Lys Glu Ala Ile Ser Pro Pro Asp Ala Ala Ser Ala Ala  
115 120 125

Pro Leu Arg Thr Ile Thr Ala Asp Thr Phe Arg Lys Leu Phe Arg Val  
130 135 140

Tyr Ser Asn Phe Leu Arg Gly Lys Leu Lys Leu Tyr Thr Gly Glu Ala  
145 150 155 160

Cys Arg Thr Gly Asp  
165

<210> 74  
 <211> 588  
 <212> DNA  
 <213> Homo sapiens

<400> 74  
 atggccctcc tgttccctct actggcagcc ctagtgatga ccagctatag ccctgttgga  
 60  
 tctctgggct gtgatctgcc tcagaacctt ggcctactta gcaggaacac cttgggtgctt  
 120  
 ctgcacaaa tgaggagaat ctcccctttc ttgtgtctca aggacagaag agacttcagg  
 180  
 ttccccaggg agatggtaaa agggagccag ttgcagaagg cccatgtcat gtctgtcctc  
 240  
 catgagatgc tgcagcagat cttcagcctc ttccacacag agcgctcctc tgctgcctgg  
 300  
 aacatgaccc tcctagacca actccacact ggacttcacg agcaactgca acacctggag  
 360  
 acctgcttgc tgcaggtagt gggagaagga gaatctgctg gggcaattag cagccctgca  
 420  
 ctgaccttga ggaggtactt ccagggaatc cgtgtctacc tgaaagagaa gaaatacagc  
 480  
 gactgtgcct gggaagtgtt cagaatggaa atcatgaaat ccttgttctt atcaacaaac  
 540  
 atgcaagaaa gactgagaag taaagataga gacctgggct catcttga  
 588

<210> 75  
 <211> 195  
 <212> PRT  
 <213> Homo sapiens

<400> 75  
 Met Ala Leu Leu Phe Pro Leu Leu Ala Ala Leu Val Met Thr Ser Tyr  
 1 5 10 15  
 Ser Pro Val Gly Ser Leu Gly Cys Asp Leu Pro Gln Asn His Gly Leu  
 20 25 30  
 Leu Ser Arg Asn Thr Leu Val Leu Leu His Gln Met Arg Arg Ile Ser  
 35 40 45  
 Pro Phe Leu Cys Leu Lys Asp Arg Arg Asp Phe Arg Phe Pro Gln Glu  
 50 55 60  
 Met Val Lys Gly Ser Gln Leu Gln Lys Ala His Val Met Ser Val Leu  
 65 70 75 80  
 His Glu Met Leu Gln Gln Ile Phe Ser Leu Phe His Thr Glu Arg Ser  
 85 90 95

Ser Ala Ala Trp Asn Met Thr Leu Leu Asp Gln Leu His Thr Gly Leu  
 100 105 110  
 His Gln Gln Leu Gln His Leu Glu Thr Cys Leu Leu Gln Val Val Gly  
 115 120 125  
 Glu Gly Glu Ser Ala Gly Ala Ile Ser Ser Pro Ala Leu Thr Leu Arg  
 130 135 140  
 Arg Tyr Phe Gln Gly Ile Arg Val Tyr Leu Lys Glu Lys Lys Tyr Ser  
 145 150 155 160  
 Asp Cys Ala Trp Glu Val Val Arg Met Glu Ile Met Lys Ser Leu Phe  
 165 170 175  
 Leu Ser Thr Asn Met Gln Glu Arg Leu Arg Ser Lys Asp Arg Asp Leu  
 180 185 190  
 Gly Ser Ser  
 195

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